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CONTENTS.

ORIGINAL CONTRIBUTIONS.

	PAGE
A Case of Elephantiasis of the Penis. By George Henry Fox, M.D.	72
A Clinical Contribution to the Knowledge of Intussusception of the Bowel in Children, with Three Illustrations. By Edward J. Ill, M.D.	207
Antenatal Factor in Gynecology, The. By John W. Ballantyne, M.D., F.R.C.P.E., F.R.S. Ed.	215
Appendicitis: Its Surgical Treatment. By Joseph Price, M.D.	105
Classification of Infectious Diseases. By W. H. Thomson, M.D.	242
Clinical Illustrations of Tachycardia and Irritable Heart. By Frank Woodbury, M.D.	251
Correction of Nasal Deformities by Subcutaneous Operations, The. By John O. Roe, M.D.	56
Cystoid Disease of the Testicle: Teratoma Testis? By F. R. Sturgis, M.D.	110
Disease in the Sigmoid Flexure. By Joseph M. Mathews, M.D., LL.D.	1
Does Sepsis Play a Prominent Causative Role in the Production of Puerperal Insanity? By Edward Brush, M.D.	141
Effects of Modern Small-Arm Projectiles, The. By Charles B. Nancrede, A.M., M.D., LL.D.	49
Experiences in Intestinal Surgery. By Matthew D. Mann, A.M., M.D.	15, 153, 197
Fat and Fecundity. By Charles A. L. Reed, M.D.	21
Functional Cardiac Murmurs. By A. Jacobi, M.D., LL.D.	97
Heart Disease from an Obstetrical Point of View. By Adam Wright, B.A., M.D.	145
Hygiene of the Bedroom and Bedstead. By Lawson Tait, F.R.C.S., M.D.	37, 156
Influence of the Clinical Laboratory in Surgery. By Willis G. Macdonald, M.D.	234
Indications for and the Election of Operation for Uterine Myomata, The. By Edward J. Ill, M.D.	304
Limitation of Operative Gynecology. By John Blair Deaver, M.D.	333
Nature of the Cancerous Process and The Cancerous Cachexia, and The Relation of Local Irritation to each, The. By Roswell Park, A.M., M.D.	289
Newspaper Medicine. By Nelson W. Wilson, M.D.	164
Notes on Prostatectomy. By Paul Thorndike, M.D.	318
Ointments and Pastes. By Ernest Wende, B.S., M.D.	44
On the Close Relationship Between the Nasal and Cranial Cavities as a Cause of Brain Disease. By William C. Kranss, M.D.	32
Post-operative Ventral Hernia. By Robert T. Morris, M.D.	212
Prognosis of Eddyism, The. By Henry Reed Hopkins, M.D.	224
Relation of Pregnancy to Nervous Diseases, The. By James Wright Putnam, M.D.	312

	PAGE
Some Facts Concerning the Treatment and Medical Complications of Typhoid Fever. By Hobart Amory Hare M.D.	4
Superstition and Science in Medicine. By Charles A. L. Reed, M.D.	340
Traumatic Ventral Hernia Eversions and Vaginal Hysterectomy Hernia. By Thomas H. Manley, M.D.	265
Treatment of Cancer of the Cervix of the Uterus Complicated by Pregnancy. By George Ben Johnston, M.D.	299
Treatment of Epilepsy in its Incipency, The. By Wm. P. Spratling, M.D.	375
Tuberculosis of the Urinary Tract. By Albert Vander Veer, M.D., and Willis G. Macdonald, M.D.	73

MISCELLANEOUS.

Do we need Iodoform? By F. A. Dunsmoor, M.D.	144
Eucalyptus and Malaria.	168
Four Cases of Infantile Monstrosity in the Same Family.	168
More Fresh Air for Women.	79
Surgical Treatment of Gonorrheal Anthritis, The. By John O'Connor, M.D.	258
Treatment of Women at the Menopause. By A. B. Dake, M.D.	79
Tuberculosis of the Epididymis. By Dudley Tait, M.D.	211

NEW BOOKS.

American Pocket Medical Dictionary. Edited by W. A. Newman Dorland, A.M., M.D.	180
A Manual of Diseases of the Eye. By Edward Jackson, A.M., M.D.	274
A Manual of the Practice of Medicine. By A. A. Stevens, A.M., M.D.	361
An American Text-Book of Surgery. By Phineas S. Conner, M.D., Frederic S. Dennis, M.D., William W. Keen, M.D., Charles B. Nancrede, M.D., Roswell Park, M.D., Lewis S. Pilcher, M.D., Nicholas Senn, M.D., Francis J. Shepherd, M.D., Lewis A. Stimson, M.D., J. Collins Warren, M.D., and J. William White, M.D.	266
Anatomy of the Brain, The. By Richard H. Whitehead, M.D.	366
A Pocket Medical Dictionary. By George M. Gould, A.M., M.D.	366
Atlas of Diseases of the Skin. By Prof. Franz Mracek.	172
Atlas of External Diseases of the Eye. By Dr. O. Haab.	172
A Text-Book of Anatomy. By American Authors.	80
A Text-Book of the Diseases of the Nose and Throat. By D. Braden Kyle, M.D.	259
A Text-Book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D.	267
A Text-Book of Materia Medica, Therapeutics and Pharmacology. By George F. Butler, Ph G., M.D.	268
A Text-Book of Embryology for Students of Medicine. By John C. Heisler, M.D.	360
A Text-Book of Diseases of Women. By Charles B. Penrose, M.D.	357

	PAGE		PAGE
Diseases of the Nose and Throat. By J. Price Brown, M.B., L.R.C.P.E.	362	Opinions of Our Esteemed Contemporaries.	190
Essentials of Physical Diagnosis of the Thorax. By Arthur M. Corwin, A.M., M.D.	367	SPECIAL THERAPEUTICS.	
Hygiene of Transmissible Diseases, Their Causation, Modes of Dissemination and Methods of Prevention. By A. C. Abbott, M.D.	273	An Ideal Blood Builder.	286
Lectures upon the Principles of Surgery. By Charles B. Nancrede, A.M., M.D., LL.D.	272	A New Treatment for Mastitis and Glandular Inflammations. By W. Andrews, M.D.	374
Love and its Affinities. By George F. Butler, M.D.	364	Antistreptococcic Serum in Puerperal Infection	287
Injuries to the Eye in their Medico-Legal Aspects. By S. Baudry, M.D.	365	Artificial Feeding of Infants, The. By A. S. Everett, M.D.	i
International Medical Annual and Practitioner's Index, The.	179	Cocoa Wine—Mariani	286
Pathology and Treatment of Sexual Impotence, The. By Victor G. Veckl, M.D.	271	Dietary of the Sick. By I. O. Nellis, M.D.	371
Sexual Instinct, The: Its Use and Dangers as Affecting Heredity and Morals. By James Foster Scott, B.A., M.D., C.M.	269	Disinfection of Cuspidores	286
Surgical Diseases of the Genito-Urinary Tract, Venereal and Sexual Diseases, The. By G. Frank Lydston, M.D.	353	Indigestion	283
Thorington. Refraction and How to Refract. By James Thorington, A.M., M.D.	264	Injuries to the Spinal Cord	286
Treatment of Pelvic Inflammations Through the Vagina, The. By Wm H Pryor, M.D.	263	Local Dressings in Pneumonia and Bronchitis	283
EDITOR'S DESK.		Mercuriol in the Treatment of Gonorrhea	374
Abolition of the Army Canteen, The.	370	My Experience with Protonuclein. By A. B. Farnham, M.D.	v
A Doctor in the Army.	279	Nordrach at Home	285
American Medical Quarterly, The.	83	Petroleum Idea, The.	285
Christian Science and Law.	82	Septic Wounds and Diphtheria. By A. F. Rogers, M.D.	v
Commissioning Contract Surgeons.	369	Soap	284
Contract Surgeons in the Army.	83	Sphere of Nutritives in Typhoid Fever, Pneumonia and Gastro-Intestinal Diseases, The. By Claude A. Dundore, M.D.	iii
Faith Healer's Idolatry, The.	182	Therapeutic Indications in Certain Diseased Conditions. By Milton P. Creel, M.D.	188
Inter-State License Reciprocity.	371	Vaccination	288
Medical Education in the United States.	369	Widal's Tests in Typhoid Fever.	288
Medical Meetings at Columbus, The.	84	Winter Coughs—Grippal Neuroses.	287
Teaching of Legal Medicine, The.	183	ABSTRACTS.	
Thumb Nail Sketches—		Abstract from "The Causation and Treatment of Consumption." By John R. Kestell, Ph C., M.D.	ix
Dr. James B. McCaw, Richmond, Va.	97	Analytical Test. By Carl Orth, P.G., M.D.	viii
Dr. L. S. McMurtry, Louisville, Ky.	85	Analytical Reports in Edinburgh Medical Journal on Phenalgin	195
Dr. Chas. A. L. Reed, Cincinnati, Ohio	85	A Striking Confirmation of the Thesis. By Lauder Brunton, M.D.	vi
Dr. Roswell Park, Buffalo, N. Y.	85	Danger in Urethran Nursing Bottles	vii
Dr. Albert Vander Veer, Albany, N. Y.	185	Defective Elimination	viii
Dr. Joseph Price, Philadelphia, Pa.	185	Diseases Less Dangerous to Life. By Samuel W. Abbott, M.D.	193
Dr. George Ben Johnston, Richmond, Va.	280	Examples of Pharmaceutical Skill.	ix
Dr. J. H. Carstens, Detroit, Mich.	281	Familiar Clinical Picture	viii
U. S. Pharmacopeia and New Drugs, The.	183	For the Throat	195
OPEN LETTERS.		Hemostasis of the Liver.	276
Competition for the American Medical Association Medal. George H. Simmons, M.D.	282	Infant Feeding	194
"Contract Surgeons in the Army." George H. Simmons, M.D.	186	Massage for Uncontrollable Vomiting of Pregnancy	193
Proposed Investigation of the Native Drug Plants of the United States. Charles A. L. Reed, M.D.	283	Medicine for the Philippines	193
To the Members of the Medical Profession in the United States. W. W. Keen, M.D.	281	Mental Suggestion	195
PORTRAITS.		New Method of Administering Creosote, The	193
Bryant, Joseph D., M.D.	Opposite 182	On the Artificial Feeding of Infants. By Joseph I. Smith, M.D.	vii
Ill, Edward J., M.D.	369	Powder Capsules	195
McDowell, Joseph Mathews, M.D., LL.D.	i	Protection for Babies	195
Wood, Leonard, Major General U. S. V.	27	Scott's Emulsion Vindicated	x
		Solution of Hydrogen Dioxid. By Joseph Feil, Ph C.	x
		Syr. Hypophosph. Fellows.	viii
		Tubercular Invasion of the Sub-Maxillary and Cervical Glands—Aseptic Cleanliness—Lymphatic Temperaments or Scrofulous Habit	ix
		FORMULÆ.	
		Female Neuroses—Non-descriptive.	375
		For Hemorrhage	283
		Hemorrhoids	283
		Menth. Collodion for Contusions	283
		Uses of Chloroform Water.	283



Joseph D. Bryant



Faithfully yours

Joseph McDowell Mathews

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DISEASE IN THE SIGMOID FLEXURE.

By JOSEPH M. MATHEWS, M. D., L. L. D.,

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Louisville, Ky.*

THE sigmoid flexure, because of its anatomical construction, its location and office, is peculiarly subject to a diseased condition. It is a physiological fact that the fecal mass starts from the cecum, and makes its rapid passage through the colon, thence into the flexure, finally dropping into the rectum. If for any cause the mass is not voided, its watery constituent is absorbed, and a large portion of the remaining mass is lifted back into the flexure by a retrostaltic movement. Here it remains in a dried state and by its mere presence proves to be an irritant. In the constipated habit this is a common occurrence. It can be easily seen that by such a procedure, a congested condition of the flexure would result. In response, symptoms indicative of such condition would be made manifest, viz.: discharges of mucus, frequently tinged with blood, an aching pain in the back, radiating down the thighs, and a frequent disposition to go to stool. These cases are generally diagnosticated as dysentery or catarrh of the bowel, but, in fact, are nothing more than the result of a local irritant. The treatment is very simple and

effective. In lieu of giving medicine by the mouth—usually astringents—such patients should receive local treatment alone. Such treatment of the colon is of recent date, but one has only to try it to be persuaded. It might be well in each case to begin by administering a brisk aperient, say a glass of Hunyadi-Janos, or Rubinat water. The method now commonly employed for local treatment is to first wash out the flexure thoroughly with warm water, or water containing a certain per cent. of boric or carbolic acid. At least a gallon of water should be used for this purpose. The instrument necessary to effect this is a Wales rectal bougie, No. 4 or 5. To this is attached a Davidson or other good bulb syringe. This local treatment should be given once a day for one week, and in this length of time the discharges of both blood and mucus will probably have disappeared. If, however, it has not, it is best to administer per rectum, in same manner as described, a mild astringent. One of the best is *fluid hydrastis*, one-half ounce to four ounces of water in dilution. This should be injected at bedtime, with directions that

the patient retain it, if possible. At the end of the second week all symptoms will have disappeared in the majority of such cases.

INFLAMMATION OF THE SIGMOID (SIGMOIDITIS).

That inflammation can have its seat in the flexure, from causes just mentioned, independent of a general colitis, there can be no doubt. If the irritant, dried feces remains a sufficient length of time, or by repeated occurrences, congestion results. If the congested state is maintained, inflammation naturally follows. Plastic infiltration takes place in the walls of the gut and, in consequence, they are much thickened. In response to this pathological condition a train of symptoms results which are both painful and annoying. Mucous discharges, tinged with blood, are of frequent occurrence; tenesmus, with a frequent desire to evacuate the bowels, and a feeling of unrest, obtains. These cases are generally denominated dysentery, but, in fact, are due only to a local irritation, which is very amenable to treatment, and soon relieved by local treatment. It is a mistake to prescribe internal medication, for by such treatment the symptoms are aggravated rather than improved. The condition soon assumes a chronic character if left alone, and its entire eradication will require some weeks or months of careful attention.

TREATMENT:—Being the result of inflammatory changes, *Sigmoiditis* should receive the same character of treatment that other inflammatory diseases of chronic type should receive, viz.: irrigation, mild astringents—local—etc. By rest is meant the avoidance of anything that would disturb the tranquility of the part. To *rest* a part physiologically might mean to first *disturb* it, in order to get rid of something that was a source of local or general irritation. Hence it is first best to give a few successive purges to a patient suffering from the

above named condition, in order to rid the local part of any mechanical irritant. An aperient is preferable because watery actions are produced. The Rubinat water, or crab orchard salts, in usual dose, administered once a day for several days, answers the purpose. Then all internal administration of remedies should cease, and local treatment be begun. A Wales bougie should be passed into the flexure and at least a-half gallon of tepid water, containing one ounce of saturated solution of boric acid, should be injected. The patient should retain this for twenty or thirty minutes and then be allowed to pass it. This should be repeated each morning—after the bowels have moved—for a week. Then an astringent wash, antiseptic in its nature, should be used. A tablespoonful of *pinus canadensis*, a drachm of campho-phenique to a pint of tepid water, thrown into the flexure once a day for six or eight days, and allowed to remain until the patient is forced to evacuate it. After the termination of the second week an oil preparation is the most serviceable. One of the best is the following: Sweet almond oil, one pint; iodoform, one drachm; sub. nit. bismuth, one-half ounce. This preparation should be shaken each time, and one ounce in a teacupful of warm water should be deposited in the flexure each night at bedtime through the Wales bougie. This should be done for one week's time, which constitutes the third week of treatment, at the end of which time patients suffering from such a condition can, in the majority of cases, be discharged cured.

ULCERATION OF THE FLEXURE.

Ulceration *per se* of the flexure is infrequent, but that it could result as the result of inflammatory changes, just described, cannot be denied. In this connection the writer would call attention to the difference between an excoriation, where both epithelium and mucous

membrane may be lost, and a single ulcer with well-defined edges, a hard base, and the characteristic discharge. When the latter exists, a cachexia must be suspected, and an entire different course of treatment pursued. If ulceration exists in the flexure, the discharges from the rectum will be very different in character from those excited either from a simple congestion or an inflammatory condition. Besides containing some blood, much mucus, casts of epithelium and pus will be observed in the stools. The desire to evacuate the bowels is nearly constant, and the relief not radical. These patients lose flesh rapidly, and complain of direct pain over the left inguinal region, and reflected pain in back and thighs. Invalidism rapidly overtakes them and they are unfitted for business. Such a condition requires more active treatment than the former. After the usual prescribed purging, an injection of two ounces of water, containing 10 grains nit. silver, will be found useful in stimulating the ulcerated surface to healthy granulation. One or two of such injections will suffice. After this the boric acid solution named, or a quart of hot water containing forty drops of carbolic acid, should be used once a day for a week. About the second or third week the iodoform oil should be substituted.

DIET:—The question of diet is not of as great importance in either character or kind of cases described here, as would at first appear. For a long time the writer held these patients to a strict diet, but it was observed that they lost flesh and strength by such a plan, and for a number of years he has abandoned such a course. Moderate eating of substantial food seems to work no detriment, but enables them to keep up good nutrition and strength.

EXERCISE:—It is not a good plan to put these patients to bed and allow them no exercise. To the contrary it is best

to allow them to go out for a walk or ride every day. Fresh air, good food, and a moderate amount of exercise, are essential to their recovery. Walking to fatigue, horseback riding, or the use of the bicycle, should be forbidden. An indigestion usually accompanies the train of symptoms, hence the stomach should be carefully watched and constipation should never be allowed to occur.

CANCER IN THE FLEXURE.

The sigmoid flexure is a common seat for malignant growths. When such condition is properly diagnosticated it is beyond the ken of medicine to cure. It becomes at once a surgical case and should so be referred by the physician in charge for opinion. If inoperable, the surgeon should in turn refer it back to the physician, for it again becomes a medical case. What can be done for the patient suffering from a cancerous condition of the sigmoid flexure? It can be safely said that in the majority of such cases nothing can be done but resort to palliation. And yet in this day of modern surgery one is inclined to give such a patient a chance for life. There are several operative procedures proposed: (1) Total resection of the flexure, with an end to end anastomosis; (2) anastomosis *around* the flexure by the Murphy button, or otherwise, and (3) colostomy.

The only one of the proposed methods which looks to a radical cure is the operation by resection. The other two leave the growth, and cannot be considered other than palliative. And yet either one of the two may not only prolong life, but may be the means of actually saving it, for total obstruction may exist, calling for such operation. But who will advise the total removal of the flexure, and under what conditions? The question is not whether it *can* be done, for that is granted, but when is it justifiable? The reader is left to determine the matter.

SOME FACTS CONCERNING THE TREATMENT AND MEDICAL COMPLICATIONS OF TYPHOID FEVER.

BY HOBART AMORY HARE, M. D.,

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THE SUBJECT to which I desire to invite your attention at this time is of far greater importance than it would appear at first sight, although every general practitioner of course recognizes that typhoid fever is a disease always with us and of sufficient severity in some cases to produce desperate illness and death. It is so large a subject that it will not be possible in a single magazine article for me to do more than touch upon a number of facts in connection with it which should be carefully borne in mind. In a paper which I read before the College of Physicians of Philadelphia, thirteen months ago, I showed that there was a decrease in the frequency and in the mortality of typhoid fever all over the world, which decrease is probably due to improved sanitation and a better knowledge of the methods which should be employed in the treatment of this malady.

The next point that I wish to take up deals with the question of what should be the proper treatment of the average case of typhoid fever. In the paper that I have already quoted, I protested against the use of the cold plunge bath in every case of typhoid fever which came into the physician's hands, first, on the ground that routine treatment was never rational and, second, because a certain proportion of patients present contra-indications to its use which are absolute, and a still larger class can be treated by properly modified hydrotherapy with excellent results. In making this latter statement I am well aware that I am doing a dangerous thing,

first, because a number of men, eminent in the medical profession, have given their support to the universal employment of the cold bath, and, second, because there is a possibility that my own position in this matter may be misunderstood. In other words, it may be that a careless reader will think that because I do not use the bath in every case, I do not use it in any case. This is exactly the opposite of the view which I wish to leave with my readers. As firmly as I believe that the plunge bath is not for every one, so do I believe that in some cases it is the best and only thing which can be employed with advantage.

I also wish to insist upon the fact that while the disease has decreased in mortality independent of such treatment, that hydrotherapy has saved a great number of lives and if properly employed will continue to do so. The important points for the physician to decide when treating any case of disease are, first, the remedy which is needed; and, second, its dose. In the opinion of those who have the largest experience, hydrotherapy is needed in every case of typhoid, and with this view I most heartily concur. When it comes to the question of dosage my point of view differs from that of some others. I believe that the mode of applying cold should be varied to the needs of the individual patient, and I have yet to see a case in which I have regretted the employment of the modified plunge bath. What, then, are the modifications that I would suggest? First, the use of cold applied to the body of the patient who is

stripped and who lies upon his bed, while the nurse gives him the necessary friction and massage. The water is to be varied in its temperature according to the persistency and degree of the fever. If the patient suffers from marked hyperesthesia of the skin, so that the cold and the rubbing make him actually wretched, the first so-called spongings may be made with water at 70°; later ice-water may be employed, or if the fever is high and persistent, a piece of ice may be rubbed over the body instead of the use of water itself. In other words, the dose of cold varies with the needs of the individual. It is of vital importance that the nurse who employs this modified bath treatment should be trained to her duties. I constantly meet with nurses who conscientiously attempt to carry out my wishes, without previous training, but who practically never succeed in reducing the temperature of the patient more than a degree when using the plan that I have mentioned. As soon as I place a trained nurse in charge of a case, I am able almost without exception to reduce the temperature many degrees, and I can exhibit several charts which are not peculiar instances of the efficiency of this method, but are simply samples taken from a large number of others.

During the past three months I have had 64 cases of typhoid fever under my care; every one of these has required hydrotherapy; in only two has the persistency of the fever necessitated the use of the cold plunge, and in both of these by a curious coincidence, and I do not consider it any more than a coincidence, hemorrhage from the bowel at once occurred. You will notice that almost without exception the temperature under the use of this form of cold falls from 2 to 4, and 6, or even 8°, proving two points: first, that if this form of cold is properly applied it reduces the temperature satisfactorily and produces a good reaction; and, second, these charts illustrate the

fact that if such a fall of temperature can be produced by mild means, why should we resort to the labor, the exhaustion, and the excessive effect of an actual plunge. I am firmly of the belief that the active rubbing which accompanies the use of cold in the way that I have described, is of great advantage to the patient, because I believe that a gentle massage given to patients suffering from typhoid fever and who are practically taking the rest cure, is an exceedingly useful thing for the maintenance of health; second, because by these frictions we increase reaction; and, third, as has been proved by Popischil, friction increases the loss of heat 80 per cent., and, according to Weisroch, the loss of moisture through the skin, 50 per cent.

There is only one thing which can be urged against this modified form of hydrotherapy which cannot be urged against the cold plunge, and that is unless it is given properly it does not reduce the fever in the way in which the cold plunge necessarily reduces it; but let it be remembered that any remedy which is powerful for good is equally powerful for harm, and that the cold plunge cannot be used carelessly or without attention to detail any more than can the cold and friction which I have named. Whenever a physician tells me that he is unable to lower the temperature by friction and cold without the plunge, I am confident that it is because the method has not been properly employed, for only rarely is the fever so persistent as to fail to drop. Very great differences are to be found in different patients in respect to the persistency of high fever under the application of hydrotherapy. In some instances active bathing serves to reduce the fever but slightly; in others moderate measures produce the marked effect. As an illustration of the great fall produced by sponging with ice-water for twenty minutes, with active friction, I may make reference to one of my recent cases in

which the chart showed that as great a fall as 8° occurred. One is tempted to inquire how low it would have fallen had the routine method of plunging every patient sick with typhoid fever been instituted. Yet the patient was an unusually heavily built, stalwart lad of twenty years, well nourished, and in good condition for bathing. Further, he came under care by the third day of his illness.

Of course in the early stages of typhoid it is a well-known fact that the fever is peculiarly resistant, not only to cold frictions but also to the plunge itself.

As I have pointed out in my recent book on the *Medical Complications and Sequelae of Typhoid Fever* (Lea Brothers & Co., 1899), a large number of variations in the character of typhoid fever occur which are apt to lead to late or erroneous diagnoses. The first of these is the so-called abortive form, but in emphasizing the fact that abortive forms do occur, let me also accentuate the fact that they do so spontaneously, and that it is not in our power to abort the disease. Again, let me emphasize the fact that no conscientious physician should make a diagnosis of abortive typhoid fever until every other possibility is carefully considered, and until his diagnosis has been confirmed by the Widal reaction. It is an interesting fact that in most of these cases of abortive typhoid fever the onset of the disease is apt to be severe, particularly in respect to temperature, which is unduly high at the start. On the other hand, typhoid fever may develop in such a mild form that all its characteristic symptoms may be masked and the patient only suffer from moderate fever and general wretchedness for several weeks. Again, exceedingly rare instances occur in which typhoid fever is present without any fever—the so-called apyretic typhoid—in which, still again, a diagnosis should only be reached with the utmost care;

and, finally, let me invite attention to the fact which has so well been emphasized by Osler, that the primary effect of the typhoid infection may be exercised upon other portions of the body than the intestinal canal, and that many cases are on record in which undoubted typhoid fever has been present without there being present any intestinal lesions whatever.

Of the aberrant or unusual forms of typhoid fever in onset, I have only space to speak of three, namely, those manifesting themselves by cerebral, pulmonary and renal manifestations.

As illustrative of the cerebral type I will briefly refer to two cases:

Annie M. was admitted to my wards March, 1899. She had been feeling badly for some time, but until four days previously had been able to do her work. On the 14th she had a severe headache, vomited a little, suffered from pain in the stomach, and had some diarrhea, these symptoms being followed on the subsequent day by not very profuse epistaxis. She walked a considerable distance to the hospital, and on her admission, at 10 p. m., her temperature was found to be 105° . The resident physician found that her tongue was thickly coated, dry and brown. On the next day when seen by us, the tongue was unusually clean even for that of a healthy person. The patient was delirious and so violent that it required four or five persons to keep her in bed. The temperature, after an unusually prolonged and severe struggle, was found to be 106° .

At this time every symptom of typhoid fever was completely masked by mania. The bowels were moved and the passages were of normal consistency and color. The urine was somewhat scanty and high colored, and the pulse full and strong. There were no rose spots or other enteric symptoms. At the end of twenty-four hours the patient, still being in a condition of wild mania, was removed to a cell, the impression being that it might be a case of hysterical mania with hyperpyrexia. Twenty-four hours later the mania had disappeared, and the typhoid symptoms once more reasserted themselves; the delirium became more quiet and muttering, and she was taken back to the wards. During the following week she was constantly delirious, and frequently maniacal, although there were short momentary intervals of sanity. During

this time a large number of rose spots appeared on the abdomen and chest, the tongue became heavily and typically furred, the temperature followed a characteristic course, the typhoid odor was present, and an occasional nosebleed helped to confirm the diagnosis of typhoid fever. The patient rapidly became worse, and died thirteen days after admission without becoming sane, except for the brief intervals named.

The following case of cerebral disturbance and pneumonia is of interest in this connection, and was seen by me through the courtesy of Dr. Higbee, who called me in consultation:

An unusually large, muscular man, about thirty-five years of age, after two or three days of wretchedness and malaise, with slight headache, developed fever of moderate degree on the fourth day, and that evening became maniacally delirious, so that it required four or five of his fellow-workmen to hold him in bed. On these workmen becoming exhausted the following night, two male nurses were put in charge of him, but he fought them so vigorously that they refused to take care of the patient when the morning arrived, as they stated that he was so powerful he threw them all about the room. When I saw him, after two nights of violent delirium of this character, he was perfectly himself mentally and described his condition and his sensations to me, using unusually good English for a man in his walk of life, and evidently having an intelligent idea of the chief symptoms to which he was subject. He had no recollection of his delirium, but he had been told by his wife of the struggles had with him on the previous night.

An exceedingly careful examination of his chest revealed at the apex of the right lung, anteriorly, a small patch where there was impaired resonance and the other physical signs of pulmonary consolidation, and after consultation, Dr. Higbee and I agreed that it was one of those cases in which there was a remarkably small pulmonary lesion, accompanied by severe meningeal and cerebral symptoms. Something about the case, however, made me suspicious of a typhoid infection, and I stated to Dr. Higbee that while there were no symptoms present that I could point to, I was suspicious of the development of this disease. That evening the man again became maniacally delirious to such an extent that his family recognized that it was impossible to keep him at home, and he was

admitted to the hospital, where he died in forty-eight hours from exhaustion. The autopsy revealed typical typhoid ulceration of Peyer's patches, and the other pathological evidences of well-marked typhoid fever.

This case illustrates very well not only the fact that pneumonia and typhoid infection may exist side by side, the pulmonary condition being, perhaps, directly due to the infection of the bacillus of Eberth, but also that cerebral symptoms of great severity may usher in both typhoid fever and pneumonia.

Of the pulmonary type the following case is interesting:

Z., a girl, aged ten years, was taken ill with a rigor and fever on November 10th, having been well enough to be up and out of doors at dancing school the day before. The fever speedily rose to points ranging from 103° to 105°, and remained about these points for the first few days, when it gradually became a little less marked. It failed to respond readily to the use of cold spongings and the cold sheet, as a rule, although at times this treatment reduced it considerably. There was but little cough, and at times none of it for two or three days, but the child was somewhat dyspneic, particularly at night, and cyanosis was marked. The pulse was usually as high as 120 to 130, and restlessness was constant. At times, particularly at night, there was delirium. An examination of her chest revealed at the right middle lobe the physical signs of consolidation—that is, bronchial breathing dulness on percussion, and absence of vesicular sounds, with exaggerated breathing elsewhere. At the left apex similar signs were present, and it was evident that the child had pneumonia. The facial expression, the somewhat dry lips and tongue, and the color of the patient's skin combined with the fact that pneumonia sometimes is due to infection by the bacillus of Eberth, made Dr. Kirkpatrick, the physician who courteously called me in consultation, and myself, cautious as to the diagnosis and the prognosis of the case, and, equally important, careful as to our treatment. The parents were told of the condition of the lung and of our suspicion that something other than a pure pneumonic infection was present, and we waited for the day of ordinary crisis with anxiety. On the ninth the temperature fell somewhat, and seemed to give promise of relief, but on the next day it maintained its course; the tongue

was found to be more enteric in appearance, and the rose rash of typhoid fever appeared on the chest and belly. Further, careful palpation and percussion at this time showed a slightly enlarged spleen and liver, an alteration in those organs not previously found, and diarrhea, or, rather, looseness of the bowels, supplanted a tendency to constipation.

Under our older ideas of these diseases it would have been thought that a primary croupous pneumonia had merged into a typhoid fever by a gradual process of developing asthenia, or, again, that a double infection with the micrococcus lanceolatus and the bacillus of Eberth had taken place, whereas at the present time we know that while such a double infection is possible, a single typhoid fever infection may result in primary pulmonary symptoms.

The difficulty in diagnosing these cases lies in the distinctly local manifestations and the fact that in some patients the fever may be quite high, delirium of an active form may be marked and every symptom pointing to intestinal typhoid lesions may be absent. The question naturally arises as to the frequency with which this form of enteric fever occurs, but statistics concerning it are difficult to collect, since in many instances the condition is never recognised, and, if recognised, is not by any means always reported. There is danger in these cases of still another error in diagnosis, and care must be exercised that a diagnosis of pneumo-typhoid is not made, when in reality the condition is one of tuberculosis of the lung, for in some cases of this character the rapid onset of fever, rigor, quickened respiration, cough, and the development of physical signs of consolidation, coupled with the continuance of fever after the time for ordinary crisis, will show that the disease is not croupous pneumonia. As a matter of fact, the cases of acute tubercular pulmonary consolidation simulating pneumonia at first or pneumo-typhoid afterward, are much more frequent than is pneumo-typhoid itself, and careful study of the case itself, or its history, and the microscopical examination of the sputum may reveal the

tubercular character of the process. In all cases of suspected pulmonary tuberculosis, however, the absence of bacilli from the sputum will not negative the diagnosis of this malady, for until some tissue breakdown occurs the bacilli may not appear in the sputum.

I have already pointed out that there is a form of pneumonia ushering in typhoid fever quite different in cause from that just named, due to double infection with the specific organism of croupous pneumonia and that of typhoid fever. Such cases have been described particularly by Chantemesse. In such instances the febrile movement of the pneumonia merges into that of enteric fever. The differential diagnosis of these two conditions is practically impossible, unless, perchance, the bacillus of Eberth is found in the feces, which is not possible before the ninth day, or the Widal test gives a positive reaction, which it rarely does in the early days of the malady.

Acute pleurisy, like acute pneumonia, may usher in enteric fever, this condition being due to the ordinary cases of pleurisy being present simultaneously with typhoid fever infection, or because of specific infection of the pleura by the typhoid bacillus. Thus, Talamon (*La Medicale Moderne*, May 28, 1892) has recorded a case of enteric fever in which the onset was characterized by acute pleurisy, but the condition differed from that ordinarily seen in this affection by reason of the intensity and persistency of the fever, by the general depression and sleeplessness, headache and vertigo. Talamon insists that there is a distinct difference to be noted between pleural typhoid and acute puerile pleurisy, if in the typhoidal infection the symptoms are out of all proportion to the physical signs. The only condition which may closely resemble pleuro-typhoid is tuberculous pleurisy, but in tuberculous pleurisy the temperature is remittent, whereas that of typhoid is rarely so. Finally, the de-

velopment of the other symptoms of typhoid will clear up the diagnosis.

In this relation the question of the frequency of typhoid fever in children may be considered. At first sight it would appear that in this class of patients it is a more common disease than formerly, but this is only because it was not recognised and recorded. Typhoid fever in children is by no means as rare as has been supposed. While the earlier years of life seem to be blessed with a relative immunity to the disease, there is no doubt that it often occurs in a mild form and is not correctly diagnosticated. A young child sickens, has fever, is wretched, has moderate diarrhea or constipation, and a coated tongue. Debility is rapidly developed, the stomach becomes irritable, and the fever is persistent even though it is not high. After an illness lasting for from a few days to several weeks, the child gradually recovers and the diagnosis originally made is adhered to, namely, that the case has been one of simple catarrhal fever. The longer one practices medicine the more strongly the idea develops that such a thing as "simple catarrhal fever" does not exist as an entity and that this term covers a multitude of diagnostic sins. As was pointed out by Liebermeister years ago, typhoid fever may occur even in adults with these mild symptoms, and be called catarrhal fever. It may be laid down, however, as a rule, that the younger the child the less likely is it to have enteric fever, and that the prognosis is usually favorable if the child be young. In other words, the older the child, the more grave the prognosis. On the other hand, it is only fair to state that Rocaz (*Annales de la Poly-clinique de Bordeaux*, 1897) believed that while the duration of the fever in children is shorter than in adults, the fever itself is apt to be excessive; that the prognosis is grave under three years, less grave at four years and only less grave than adults when the child is about five years of age.

This question of how frequently typhoid fever does occur in children is of great importance. At the head of those who advocate the view that it is common we have Ashley and Wright (*Diseases of Children*), who assert that "children and young people are more susceptible to typhoid fever than are adults, though it is not common in children under three years of age." This is certainly an excessive statement, although Pepper (*American System of Medicine*, vol. ii.) states that typhoid fever is far more common in early life than is generally recognised. Hensch records 376 cases and 26 autopsies in children from this disease, and Barthez and Sanne state that the disease is as frequent among children as among adults. On the other hand, there is an immense amount of evidence to prove that the disease is so rare as to be almost a curiosity in children. Thus, William Perry Northrup has taken the statistics of the New York Foundling Hospital, the New York Infant Asylum, and the Children's Hospital of Philadelphia, and finds that in the twenty years at the New York Foundling Hospital, with 1,800 cases under care, 1,100 of which were boarded in the country, returning to the hospital when ill, not a single case has been seen by himself, J. Lewis Smith and O'Dwyer. Further, in 2,000 autopsies on children, Northrup did not find a case, perhaps because typhoid fever rarely brings a child to autopsy, and during an epidemic in Stamford, Conn., in 1895, out of 400 cases at all ages, but four cases of enteric fever developed under four years of age.

Holt (*Diseases of Children*) states that he has never met with enteric fever in a child under two years of age. He never saw a case in the New York Infant Asylum, in a service of eight years, although 15,000 cases were admitted in that time (probably all these cases did not come under his term of service). One case was admitted to the Baby's Hospital in

seven years, at the age of two years and a half. In this relation it is interesting to note that Taupin (*Journal des Connaissances Méd. and Chir.*, 1839, No. 7), writing sixty years ago, says that the rarity of this fever in children is more apparent than real, and points out that the mild manifestations of the disease are overlooked.

Notwithstanding these statistics, we find that typhoid fever does occur quite frequently in the hands of some practitioners. Thus, Forchheimer (*American Lancet*, March, 1889) treated 70 cases in 1888 in one epidemic, and Morse, in analysing 284 cases in the Boston City Hospital, in which this disease appeared, found 3 under five years of age, 77 between five and ten years, and 204 between ten and fifteen years. Holt quotes 970 cases of enteric fever in children collected from eight authors whose names he does not give. Of these 970 cases, 8 per cent. occurred under five years; 42 per cent. between five and ten years, and 50 per cent. between ten and fifteen years. He also quotes an epidemic of 115 persons, of whom three were under two years of age.

I think it is fair to conclude, therefore, that Taupin's assertion in 1839 that typhoid fever is not a rare disease in children is correct. At the present time the diagnosis of typhoid fever in children must rest largely upon the chance development of the characteristic rash and enlarged spleen, and more than all upon the Widal test for the moderation in all the symptoms so characteristic of the affection in childhood, and the fact that a swollen spleen and liver and a coated tongue with fever are so commonly met with in various children's ailments, make an absolute diagnosis in many instances without this test, almost impossible.

Typhoid fever is not common in pregnancy, but when it occurs is a serious matter, for abortion often follows, particularly if the fever be high. The per-

centage of abortion is about 56 per cent. In 310 cases collected by Sacquin, 199 aborted. The mortality, according to Brieger, was 19 in 91 cases, and, according to Vinay, 17 per cent. in 183 cases. Death to the fetus does not always occur as a result of premature birth due to typhoid fever: thus Touvenaint (*Journal de Médecine de Paris*, July 8, 1894) reports a case of premature birth at the end of the seventh month, the child surviving and the mother dying.

The relation of typhoid fever to appendicitis is one of great interest. It has been thought by some that appendicitis arising in typhoid fever was a mere coincidence; by others that its origin depended upon a general infectious process, and, again, by others, that its inflammation was due to the direct infection with the bacillus of Eberth. Probably all these views hold true in individual cases. The richness of the appendix in lymphoid tissue, and the fact that typhoid fever is particularly prone to attack such tissue, renders this organ peculiarly susceptible on theoretical grounds. That this view is correct is proved by the research of Hopfenhausen (*Revue Méd. de la Suisse Romande*, February 20, 1899), who preserved the appendices obtained from thirty cases of typhoid fever, and studied them under Stilling in the University of Lausanne. She concludes that moderate changes in the appendix may be found in nearly all cases of this character, that it is most marked in the earlier stage of the malady, and consists chiefly in cellular infiltration, specific lesions being rare and not being sufficient to produce the more severe forms of appendicular disease. True appendicitis complicating typhoid in the sense of inflammation of this part, severe enough to produce abscess, is undoubtedly a very rare affection. One such case is reported further on, as occurring in my own practice. Here a large abscess containing over a pint of pus having the odor of a typhoid

fever stool, was allowed to escape by an incision. Recovery occurred. In more frequent instances the appendix is the seat of typhoid ulcers, or an ulcer, although the recorded cases in which this lesion has been found are surprisingly few. This scantiness of reports is probably due in large part to the fact that the appendix is not carefully examined for lesions in making autopsies, for in the cases with which I am acquainted in which the appendix has been carefully examined, appendicular lesions have been surprisingly frequent. At a recent meeting of the Pathological Society of Philadelphia, Stengel made a verbal report of several instances in which typhoid ulcer had been found in the appendix, as did also Sailer, and in a paper on typhoid ulcer of the esophagus, Riesman incidentally mentioned appendicular typhoid ulcer as being also present in his case. Keen has well said, therefore, in his essay, that in all cases of operation for intestinal perforation in typhoid fever the surgeon should examine the appendix to discover if it is diseased. In Keen's table of operations done for intestinal perforation, cases of associated appendicular lesions are recorded by Bontecou (*Journal of American Medical Association*, January 28, 1888, p. 106); Kimura (*Sei-i-kwai Medical Journal*, 1890, ix., 55), and Alexandroff (Report of Hospital St. Olga, in Moscow, 1890, 198), there were three large perforations of the appendix in this case.

Additional cases have been chiefly collected by Kelynack (*Pathology of the Vermiform Appendix*, London, 1892), who points out that Murchison (*The Continued Fevers*, 2d. ed., 1873, p. 623, and *Transactions Pathological Society*, London, 1866, xvii., p. 127), saw two cases of appendicular ulceration, one in a girl of thirteen years, four ulcers being present. Two small perforations were found in it. Norman Moore (*Transactions Pathological Society*, London,

1883, xxxiv., 113), records four cases. Death was due in two of them to perforation of the appendix; another had an ulcer at the tip of the organ. Fitz found in 257 cases of appendicular perforation only three due to typhoid fever, and, in a later paper (*Transactions of Association of American Physicians*, 1891), in 167 cases five instances with this lesion. All these quotations throw light on this matter, but the reports of Morin (*Thèse de Paris*, 1869) and Heschl (*Schmidt's Jahrbucher*, 1853, lxxx., p. 42) give a much higher percentage. Thus, Morin in 67 collected cases finds 12 examples of appendicular perforation of 18.75 per cent., and Heschl, in 56 cases, found this lesion in 8, or 14.3 per cent. McArdle (*Transactions Royal Academy Medicine, Ireland*, 1888, vi., 392) has also reported a case. In the very interesting paper by Hopfenhausen (*Revue Méd. de la Suisse Romande*, February 20, 1899, *L'étude sur l'état et l'appendice vermiform dans le cours de la fièvre typhoïde*) on this topic already quoted, she tells us that she collected the statistics concerning the appendix in 808 cases which came to autopsy in St. Petersburg (*Protocoles des instituts pathologique de l'Hôpital municipale d'Obouchow et de l'Hôpital municipale de Ste. Marie-Madeleine*, 1889-1897), and found perforation of the appendix in eight cases. In one of these the perforation had caused perityphlitis, found post mortem; in two others the diagnosis was made in life. In 117 cases general peritonitis was found, and in 109 this was attributed to intestinal perforation.

THE CIRCULATION IN THE LATER STAGES OF THE DISEASE AND IN CONVA- LESCENCE.

There are few, if any, diseases which do not have special predilection for the heart muscles or its valves, which so gravely interfere with proper circulation as does typhoid fever. The length of the

febrile movement and its severity, the gravity of the toxemia, the wasting of the patient, his inability in certain cases to take sufficient nourishment, and the impaired action of various other vital organs than the heart, all tend to produce weakness in the heart muscle and actual degenerative changes in its nerve-supply and fibres. As long ago as 1875 Hayem (*Leçons Clinique sur les Manifestations Cardiaques et la Fièvre Typhoïde*, Paris, 1875) made one of his characteristically thorough studies concerning the heart muscle in typhoid fever, in which he showed that a granular parenchymatous degeneration is present in many cases, and that even fatty degeneration may be met with in prolonged severe cases, associated with great anemia. Hyaline changes are not commonly found, but a segmenting myocarditis, in which the intercellular cement substance is softened, may be present, although this is, perhaps, a post-mortem change. Many years ago, Stokes asserted that the heart muscle of patients dead of enteric fever was so softened that if it were held upside down by its great vessels the muscle would collapse over the hand as a mushroom overspreads its stem. In some cases, on the other hand, the heart seems to escape almost completely.

It is not my intention at this point to deal exhaustively with the disorders of the circulation in this disease (see my essay already referred to), nor with the microscopical alterations which occur, but rather with the objective symptoms of the disease. Little further need be said then of these changes themselves, except that in this relation the researches of Hoffmann are of interest. He found hearts in typhoid fever patients, 56 instances in which the heart muscle was normal or little changed; 39 in which it was slightly granular, the striations still being visible; 46 in which the muscle was granular; 19 in which it was slightly waxy; 1 in which was granular degenera-

tion, and 1 in which it was waxy. It is worthy of note that these changes are responsible in a large proportion of cases for the sudden deaths which occur in the convalescent period of the disease, even more commonly than in the course of the disease itself. So frequent is this condition of sudden cardiac failure an accident of convalescence rather than of the febrile attack, that Graves tells us that even if the fever has departed and everything about the patient is favorable, we are not justified in banishing all anxiety or in relaxing vigilance, as a sudden effort on the part of the patient may cause fatal syncope. Instances of this sort have been recorded among the older writers, by Bailly, Graves (*Clinical Medicine*), Jaccoud and Louis. More recently Dewerve (*De la mort Subite dans les Fièvres Typhoïde*, Arch. Gen. de Méd., 1887, vol. ii., p. 385) reports that in 48 cases analysed by him the heart was found softened, pale, and of a dead-leaf color in fifteen instances; had undergone fatty or granular degeneration in sixteen instances, and in three others there was proliferative endarteritis of the small vessels of the heart.

Dewerve also found in analysing these cases that it occurred most frequently in persons between the ages of twenty-two and twenty-five years, probably because this is the age most frequently affected by enteric fever, and that old age and infancy rarely suffered from it. The accident itself is far more common in men than in women, for this writer found it in the proportion of 114 to 26. It is interesting to note that this condition is not a sequel of severe cases alone, for Dewerve asserts, on the contrary, that it is emphatically a sequel of a mild form of the fever (*forme moyenne*). Further, violent effort is not necessary to produce it, for it has occurred after so slight a movement as extending the arm, by emotion, and may develop without any such cause, the patients being found

dead in bed in the posture they were in when asleep. Liebermeister records the case of a woman who ate a hearty dinner after convalescence from a mild illness of typhoid fever, rose to go to the closet, fell in a faint and died in ten minutes; and another case of a man who was unable to take the upright posture for many weeks without suffering from nausea, vomiting, collapse, and partial syncope, but who ultimately recovered. The autopsy of the woman revealed no lesions save profound cerebral anemia.

There are, however, other causes of sudden failure of the heart than myocardial degeneration, namely, embolism or thrombosis of the coronary artery or arteries, heart-clot, thrombosis or embolism of the cavæ or pulmonary veins, and pericarditis with effusion which, pressing on the heart when a change in position is attempted, causes sudden death. In the cases already quoted as having been analysed by Dewerve (48 cases) there were eight with thrombosis of the coronary arteries. In eight other cases ante-mortem clots were found in the right ventricle. Liebermeister reports one case at Tübingen, in which death occurred as a result of embolism of that branch of the pulmonary artery that goes to the lower lobe of the right lung. In this case the embolus arose from thrombosis of the right crural vein, and was accompanied by extensive hemorrhagic infarction. Clots in the coronary arteries may arise from within the heart cavities from granulation on the endocardium. Further than this Beaumanon (*La Progres Médicale*, 1891, vol. ix., p. 364), Fritz (*Charité Annalen*, vol. vi., p. 268), Vallette (*Contribution à l'étude de la Gangrene des membres pendant la cours de la Fièvre Typhoïde*, Thèse de Paris, 1890, Ferrand), Forgues (*Rec. de Mem. de Med. Milet*, 1880, 3d series, vol. xxxvi., p. 368), Drewitt (*Lancet*, 1890, vol. ii., p. 1023), and others, have met with these formations. According

to Drewitt, however, these clots are found in the heart in the acute period of the disease, and then are dislodged when the circulation increases in tone in convalescence. Viti (*Atta della Roy. Accad. del Fisiocritica de Siewa*, 4th series, vol. ii., fasc. 5 and 6, 1890) has found the bacillus of Eberth in the granulations of endocarditis and, furthermore, has produced these lesions in rabbits by inoculating them with the bacillus, and Vincent (*Merc. Médicale*, February 17, 1892, p. 73) has recorded the case of a previously healthy soldier who died from enteric fever, and in the vegetations of his mitral valves those specific bacilli were found. Girode (*Comptes Rendu Soc. Biol.*, 1889, p. 622) has made a similar report. Hayem (*Progres Médical*, 1875), also, has recorded a case in which endocardial difficulty was recognized in life, and two days later symptoms of plugging of the arteries in both legs ensued. First, pulsation ceased in the dorsales pedes, then in the popliteals, and finally in the femorals, whereupon gangrene developed. The embolus was found in the femoral vein, and did not extend below the knee. The autopsy showed ante-mortem cardiac clots, endocarditis, thrombosis of the aorta, and multiple infarctions in the kidney. On the other hand, it must not be forgotten that endocarditis complicating typhoid fever is rare. Osler says he has seen only two cases. Only eleven cases occurred in 2,000 cases in Munich. Pericarditis is also very rare (14 in 2,000 cases in Munich).

Liebermeister tells us that endocarditis is rare in typhoid fever, and mentions but one case of the severe form, accompanied by a development of excessive warty growths, with perforation of two of the semi-lunar folds, and consequent infarction in the kidneys and spleen, double pleural pneumonia and death. He believes, however, that a mild form of endocarditis

without ulceration is more commonly met with. In other cases embolism of the pulmonary artery results from thrombosis of the femoral vein and causes sudden death. Thus Nawercks (*Correspondenzblatt für Schweizer, Aertze*, 1879, 485) records a case of this character in which the patient dropped dead when at stool, death coming on in ten minutes, and Bouley (*Progres Médicale*, 1880, viii., 998) reports a case of ascending thrombus of the femoral veins into the cava, and from there into the right auricle.

In still other instances an endarteritis may involve the coronary vessels and cause sudden death, if we can rely upon the views of Landouzy and Siredey (*Contribution à l'Histoire de l'arterite Typhoïdique, Rev. de Médecine*, 1885). Those interested should also read a paper by Landouzy and Siredey (*Etude des Angio-Cardiaques Typhoïdiques leues conséquences immédiates, prochaines et éloignées. Revue de Méd.*, 1887, p. 804). These investigators tell us that from the clinical point of view the manifestations of cardio-vascular disease in typhoid fever may present two different aspects. Sometimes the rapid spread of the lesions in the heart and vessels is accompanied by a rapid pulse, with great feebleness of the heart and, perhaps, by its sudden arrest. Sometimes, on the contrary, these changes are developed so slowly and insidiously that death occurs more or less remotely and with variable degrees of cardiopathic change. The symptoms usually met with in the first variety may be classed as those of collapse, with great lack of power in the cardiac muscle. The pulse becomes extremely rapid, small, irregular; the face is livid, the eyes sunken, the voice feeble, and the extremities cold. The temperature may be subnormal. The urine is scanty or suppressed. The

respirations are embarrassed, and the lungs are affected by hypostatic congestion. Finally, coma and death come on. This form of collapse may come on as early as the second or third week. The feeble apex beat and rapid pulse indicate a diffuse alteration in the heart muscle, which is usually a fatty degeneration of its fibre (*granulo-graisseuse*). In cases of sudden death, on the other hand, the lesions are chiefly connected with the walls of the cardiac vessels, the symptoms being in abeyance for the most part till the fatal moment, but dependent upon gradually increasing degenerative processes.

In yet other cases where the changes are less marked, the patient does not suffer from severe and alarming symptoms, but instead of these the patient is affected by a disordered circulation and lack of tone in the heart and vessels. The chief signs of these conditions are intermittance of the pulse and a harsh diastolic murmur at the cardiac base. The cardiac lesions in mild cases may be entirely recovered from so far as symptoms are concerned, but the actual lesions themselves often remain, and Landouzy and Siredey record a case in which a second attack of typhoid fever came on two years after the first, and at the autopsy old and new lesions were found in the myocardium. As a matter of fact, the cardiac changes of typhoid fever are closely allied to those that are found in cases affected by other infectious diseases of a severe type.

Finally, sudden death in typhoid fever may occur as early as the tenth day. Méry reported such a case to the *Société Anatomique* in October, 1887. He states that the myocardium did not show any histological changes and that the patient had been treated by the Brand bath.

EXPERIENCES IN INTESTINAL SURGERY.

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IT is proposed in this paper to relate my personal experiences with intestinal surgery. The cases have occurred in a series of something over a thousand abdominal sections. In many of these operations there were slight lesions of the intestines, such as injury of the peritoneal coat, small perforations, and rupturing of adhesions, which it was not thought necessary to detail. The cases selected are those in which the intestinal lesions have been the more, or at least a, prominent part.

There is, perhaps, no part of abdominal surgery which is in one way easier, and in another more difficult, than surgery of the intestines, and none in which more satisfactory results can be obtained, provided due care and caution are taken. After having related the cases, I shall analyse them to see the cause of success or failure, and try to draw some deductions for guidance in the future. A few of the cases have already been published, but will be briefly recounted again, in order to make the series complete:

CASE 1.—*Celiotomy, nine times. Recovery. 1.—Oöphorectomy. 2.—Lumbar colotomy. 3.—Lateral anastomosis; ileum to sigmoid. 4.—Division of ileum near ileo-cecal valve; closure of two ends. 5.—Imperfect closure of descending colon below artificial anus. 6.—Closure of a median fecal fistula and separation of intestine at artificial anus; complete closure of two ends. 7.—Closure of ventral hernia. 8.—Same. 9.—Same.*

Such a complication of difficulties as affected this patient is not very often met

with; but the history will serve to show how even very serious complications may be overcome by patience and perseverance on the part of the surgeon and by pluck and determination on the part of the patient. I think it may be safely said that very few people would have gone through what this young woman did in order to regain health; and, in the end, she obtained the desired result, it is due to a very great extent to her own strong will and her determination to get well and to be of some use in the world.

In November, 1889, I was asked to see a woman, twenty-three years of age, and unmarried. She stated that she had not known what it was to be well from early childhood; that her life had been one of almost constant suffering; and that for the greater portion of the six years before she had been confined to her bed.

Menstruation had come on late, had always been vicarious, appearing only at long intervals, and was attended by the most severe pain. She had had great trouble with her bowels, having been affected with the severest forms of constipation, which had finally come to be almost an obstruction. For a year before coming to me, she had been in a sanitarium, and had had only one movement of the bowels each week. At this time she was given a large quantity of Rochelle salts, which caused such intense suffering that a hypodermic injection of morphia was given to allay the pain. She was then carried to the operating table, given an anesthetic of ether and chloro-

form, and medicated enemas were administered by the physicians in charge until a movement was obtained. The suffering as a result of this treatment was very severe, and generally lasted about twenty-four hours each time afterward. She had also experienced much pain in the bladder, quite early in life had learned to use the catheter, and for seven years had depended almost entirely upon it to empty the bladder. At times she suffered from nausea, and for weeks at a time was unable to retain only small quantities of food in the stomach.

She had spent years in different sanitariums, seeking relief, had tried all kinds of treatment, and had submitted to three surgical operations on the rectum, said to have been for the purpose of removing an obstruction.

She was large, well nourished, and did not look like one who had suffered as much as I have described. But, as I found afterward, this was no sign of good health with her, as she never seemed to grow thin under any of the severe trials to which I afterward subjected her. There were no manifestations of hysteria present at any time.

I made a vaginal examination, and found, in the first place, with the finger in the vagina, great tenderness in the urethra and the neck of the bladder. The uterus I found to be very small, the sound only passing in two inches, and the cervix was not more than one-third the natural size. It did not seem to be tender, nor was there any excessive secretion. Behind the uterus, on each side, I found two bodies, which were evidently the ovaries. They were very much enlarged, three or four times their natural size, and exquisitely tender to the touch. The left one lay between the rectum and the uterus, and was in such a position, and so tender, that it seemed to me that the trouble with the rectum might be due in part to this prolapsed ovary.

As the ovaries were manifestly very much diseased, and as from the undeveloped condition of the uterus they never could properly perform their functions, and as they seemed to have a great deal to do with her general bad symptoms, I proposed their removal. To this she assented, catching at any straw for the prospect of relief.

(*Op. 1*).—On November 7, 1889, I operated, removing both the ovaries without any difficulty. At the time the abdomen was opened, I carefully examined the upper portion of the rectum and the sigmoid flexure, both by touch and sight as far as possible, but could discover nothing wrong there. I was able to pass a large rectal bougie with the hand in the abdomen, and to get it well beyond the the brim of the pelvis, so that manifestly there was no stricture as had been previously supposed. I also carefully examined the uterus, and its infantile condition was fully established.

The patient made a good recovery. Following the operation, there was relief of some of the symptoms. The stomach acted better, there was less pain, and the bowels moved a little more easily; but the relief was not nearly so great as I had hoped for. The patient returned home, but came back to me again in March, seeking further relief. The trouble of which she complained at this time was mostly the obstruction of the bowels and the inability to empty the bladder. In order to determine, if possible, the exact condition of the bowels, and what was causing so much pain and trouble, I called a consultation. A most thorough examination under an anesthetic was made, and I introduced my entire hand into the rectum. I found it much dilated; there was plenty of room, but no evidences of any stricture, thus agreeing with the previous examination made at the time of the laparotomy. It was decided that the trouble was probably a

chronic prolapse of the colon at the sigmoid flexure, and that the only hope of relief lay in making an artificial anus above the site of the bend.

(*Op. 2*).—This I did March 11, 1890. The incision was made in the lumbar region, about three inches from the median line, and just below the border of the ribs. There was no difficulty in finding the large intestine and raising it through the wound. It was then sewed to the skin around the upper portion of the wound, and the remainder of the wound closed by deep sutures. Afterward the intestine was opened, and the artificial anus established.

This gave great relief, and for a time the patient was satisfied; but soon she began to complain very bitterly of the annoyance. There was so much tenderness that it was found impossible to wear any kind of a plug which would prevent the movements of the bowels, so that her life was rendered almost useless by the uncertainty which attended their action. She also suffered much from the bladder. To relieve this, I used all sorts of injections, but none did any permanent good. Therefore, in June, I made a permanent vesico-vaginal fistula for purposes of drainage. This gave her great relief, and after it had been opened about six months I closed the opening. The tenderness in the bladder had now departed, and from that time forward she has never had anything but very temporary trouble from this source. Her experience, however, before this was closed, with a leaking bladder and a leaking intestine, was anything but pleasant; and, although the closure of the bladder relieved the worst of the unpleasantness, still she prayed that something might be done for the closure of the artificial anus. During the eight months following the operation, she was directed to wash out the lower bowel daily, until the water came through the artificial anus. This she did faithfully, and the

tenderness of the bowel was thereby very much relieved. We were never at any time able to pass an instrument, or even water, from the artificial anus down into the rectum.

(*Op. 3*).—In November, her demand for relief was so great, that I could no longer resist it; so I determined upon another operation. I thought that, if we could unite the small intestine just before it enters the head of the colon, with the upper part of the rectum below the obstruction, thus cutting out, as it were, the entire large intestine from the circuit, that we would undoubtedly give her relief.

On November 25, 1890, this was done. I had intended using Senn's plates, but was unable to procure them in time. Some rawhide plates were procured and prepared, but I decided not to use them. The portions of intestine were first laid side by side, and united by Lembert sutures of fine silk for about two inches and a half. The intestines were then, both of them, opened a quarter of an inch from this line of suture, in parallel lines, and the edges brought together by a fine catgut suture, passed through the entire thickness of the intestine with an overhand stitch. The opposite sides of the incision were then brought together with the Lembert stitch, great care being taken to secure firm union at the ends of the incisions. The operation lasted an hour and a half, and the patient bore it very well. She made an excellent recovery, but the object of the operation was not gained. None of the intestinal contents apparently passed through the artificial opening. They followed the old course, passing out through the artificial anus.

(*Op. 4*).—Not discouraged by this failure, on December 23, 1890, I again opened the abdomen in the old scar. I divided the ileum a short distance from the ileo-cecal valve. I found the artificial communication before made to be

entirely pervious. Both the cut ends of the small intestine were closed by catgut stitches through the mucous membrane, and by Lembert sutures of fine silk through the peritoneum. The abdominal wound was closed by wire stitches in the usual manner. The patient recovered from this operation as usual.

She returned to the hospital in March, 1891, and reported that the movements were mostly through the rectum, but that a small amount still came through the outside, coming up from the rectum. This gave her great discomfort, and she was ready to try the knife again for relief.

(Op. 5).—On March 30, I put her under chloroform, loosened the gut around the artificial anus, pulled up a portion of the descending colon, freshened the mucous membrane, and brought the edges

some time, but was not very much relieved by this operation. It was, in fact, a failure. In April, I found that, since the last operation, feces had been discharging through the side, and also through the fistula in the cicatrix of the former operation.

(Op. 6).—I now proposed to again open the abdomen, permanently close the fecal fistula, separate the gut at the point of the artificial anus, and close the lower section securely. This was done April 21, 1891. The median incision was made; the intestine which contained the fistula was exposed, and the fistula closed with fine silk peritoneal sutures. The opening was exceedingly small. The fistula's track in the cicatrix was carefully dissected out. Another incision was then made at the side of the artificial anus, the lower end of the descending colon freed from its attachments, and entirely cut across. The mucous membrane was then sewed with fine catgut suture, and the silk peritoneal sutures introduced. Both wounds were closed with several wire sutures, and the usual dressings applied.

The operation lasted an hour and a half, and the patient stood it well. For a week after the operation she was entirely out of her head. She got out of bed several times, and finally it was necessary to restrain her in order to keep her in bed. The wounds healed well, but a small sinus developed in the side of the median incision. She was discharged from the hospital, May 23, before the sinus had quite closed. She was told to leave it entirely alone and let it close of its own accord, which it very soon did.

The patient's general health at this time was excellent, the bowels moving freely, naturally, and without pain, the bladder giving no trouble, and, as far as I could tell at the time, aside from a little weakness from her long period of rest in bed, she was in perfect health.

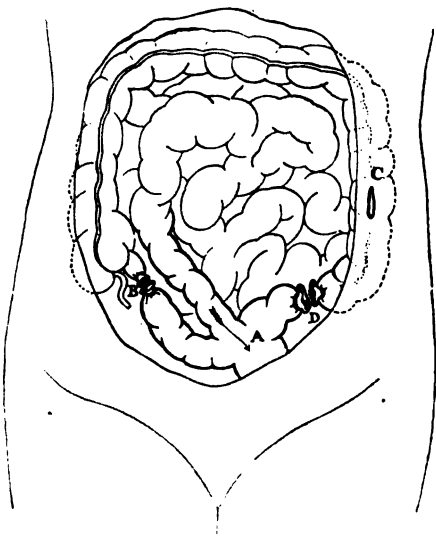


FIG. 1.

- A Anastomosis ileum to sigmoid.
- B Cut and closed ends of ileum.
- C Artificial anus.
- D Cut and closed ends of sigmoid.

together with catgut. The opening from the transverse colon was left patent. A small sinus was found to exist in the scar of the old median incision, and following the last operation it was opened and packed with iodoform gauze.

The patient staid in the hospital for

During the summer my patient reported herself as being in very good health. The large intestine at one time seemed to fill with a kind of secretion, and, owing to the contraction of the opening which had been left leading into the upper portion of the large intestine at the seat of the artificial anus, this secretion could not escape. During my absence from the city, she applied to Dr. Park, who gave her some tupelo tents, and advised her to dilate the opening with these. This she did, and after thoroughly washing out the bowels obtained great relief.

For some time she wore a hard rubber plug, about two inches in length, attached by a movable joint to a flat disk of rubber. This caused her no pain, and kept the opening into the transverse colon from closing. Lately she has found it unnecessary to wear this plug.

In September she reported again, and I found at that time that the median incision had given way to a certain extent, and that a ventral hernia existed. This was causing her a good deal of annoyance, preventing her from walking and standing with ease, and she strongly desired that something should be done for it.

(*Op. 7*).—In the following October, I made an incision three inches long, dissected out the different layers of tissue, secured the fascia, and brought the edges together with catgut. Five deep wire sutures were also inserted. The wound healed by first intention, and her recovery was prompt and uneventful, her temperature being normal after the first day. She was discharged at the end of three weeks, apparently perfectly well.

Soon after her return home, she was taken with the epidemic influenza, and, as a result of the hard coughing, there was a slight giving way again in the median line and a return of the hernia. Again she returned to the hospital.

(*Op. 8*).—This time Dr. Roswell Park

operated, closing the wound with deep buried silkworm gut, instead of catgut, as I had done. The operation was unsuccessful; the hernia returned and continued to grow worse. Nothing daunted, she returned, and on February 16, 1893, (*Op. 9*), I operated for the last time, and, up to date, with perfect success. In a letter she makes the following statement:

"In comparing my past and present conditions of health, it truly seems almost a miracle, as I have never known what it was, in the past, to be so free from pain as I am at the present time. The difficulties having been removed, I am now gaining strength, and hope soon to take up life's work in earnest."

Since then she has been in employ as nurse, and is now—April, 1899—at the head of a large institution.

There are a number of points of interest in this case which I have not yet alluded to. The patient was very susceptible to pain; but morphia in any shape caused her to become delirious and to lose all self-control. At such times she would cry by the hour, and moan incessantly, and it required an immense amount of patience to get along with her. It was sometime before I discovered that this was due to the morphine; and, when I finally stopped it, she quickly improved. In the latter operations I refrained from giving her morphine for more than one or two days, or until the acutest pain had subsided.

Another curious fact was that, from frequent use, she acquired a tolerance for ether, so that it was impossible to put her fully under its influence. Chloroform, however, acted well, though it took a large amount to affect her.

It might be supposed that, from the many operations, numerous adhesions would have interfered with the later operations. As a fact, I found no adhesions, except of a portion of the intestine to the abdominal wall near the line

of incision, at the time of the fecal fistula

She finds it necessary each month to wash out the "cut-off" portion of the large bowel through the artificial opening; but it gives her very little trouble or uneasiness at other times. The cleansing process, she says, is very painful, as a large amount of secretion collects, and becomes hard and dry, almost like fecal matter, and of a very offensive order. If the secretion is not removed once a month, it causes nausea, sharp pains in the bowels and extreme nervousness.

One deduction that we may draw from.

this case is that lateral openings in intestine, unless there be an obstruction beyond, will not divert the current of intestinal contents from its regular course. This is seen both in the lateral anastomosis and at the artificial anus. In neither instance could the intestinal current be turned in the desired direction until the intestine beyond the lateral opening was completely obstructed. Several interesting deductions might be made bearing upon the physiology of the intestinal track; but space forbids my entering into this matter at present.

(To be continued.)



FAT AND FECUNDITY.

A Study of the Cause, Pathology and Treatment of Sterility Due to Obesity in Women.

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THE theme to the discussion of which this paper is addressed has been forced upon me by numerous cases which, in former years, were dismissed with but too little consideration, but to which I now give the closest attention. They consist, for the most part, of rotund women, whose complaints are restricted to disappointed maternal yearnings, and to what they look upon as a waning sexuality. These cases give a clear enough family and personal history; they tell of a normal menstruation; of a marriage happily enough consummated, and of a present state free from aches and pains. Their cheeks may be ruddy, their eyes clear, and their voices resonant. They say, however, that they have been married one, three, five, fifteen or more years, as the case may be, and that after marriage their health so improved that they became stout, but that, although desirous of having children, they have failed to conceive. They tell us, moreover, that they have not only failed to conceive, but that, latterly, their menstrual flow is less frequent and less abundant, and that there is a distinct decline in their sexual feelings. And, here, we are told of the unhappiness that has overtaken them, even before they have reached the meridian of womanhood, the martyrdom of an asexual connubiality is quickly dismissed to give stress to the promptings, the yearnings, the imperious demands of the parental impulse. We are told of the silent specter that sits,

at quiet hours, between husband and wife, and we hear the hollow echoes of the childless home. We are informed of material interests that are contingent upon issue, and we are apprised of dissatisfactions that are imminent menaces to the domestic establishment itself. These are the appeals that prompt us to give careful thought to the underlying causes, to the pathology and to the treatment of the conditions that confront us.

PRIMARY BIOLOGIC FACTS.

In approaching a discussion of the relation of obesity to the reproductive functions in women, I desire, by way of logical introduction, to review briefly a few primary biologic facts. Thus, all organic beings are enabled to exercise special organic functions only because of the equilibration of all the functions of the organism. This law finds an exemplification in the every day clinical observation, that when one function has departed from its normal standard, either by excessive or diminished activity, there is a corresponding perturbation of one or more of the other functions of the system. What is true of this interdependence of the various functions when maturity, with its relative equilibration, is attained, finds special illustration in the lack of equilibration shown during the developmental period of life. In early life we find a relatively greater activity of the gastric and chylipoietic functions, while cerebration and activities depending upon the exercise of the specifi-

senses and muscular activity are in correspondingly relative abeyance. These activities that imply waste of organic products or expenditure of that which we call vital energy beyond the source of supply, are held in repression by a wise provision of nature. The serious consequences of violations of this law are exemplified in fact and in consequence by the disastrous results of poverty and of child labor upon those of tender years. The most striking illustration of what I have said, however, is found in the fact that the maturity of the reproductive function is realised only after the functions of nutrition have reached a state of relatively stable equilibrium, as exemplified in the maturity of the individual. Another illustration, the converse of the foregoing but none the less emphatic, is found in the natural decline of the reproductive function at the age when waste naturally becomes greater than repair. Both these propositions, which are, in reality, but one, find ample illustration in the lower animals—not alone in the manifestations of puberty and the menopause, but in the fertility manifested under various conditions between these epochs. It thus happens that the fertility of the female is seldom as pronounced in earlier pregnancies as in those which occur at an age when growth is more surely completed. "The eggs laid by the pullet are relatively small and few. All dog breeders know that the early litters of a bitch are never as numerous and strong as the later ones. In swine the same variation is observable—those very young producing pigs that are weak and imperfect.¹ The same is true of fillies and cows." Precocious conceptions in women are liable to produce puny children. It is significant that, according to Brem, of 130 multiple deliveries in the Budapest Clinic from 1869 to 1887, 25 per cent. occurred among first pregnancies, the remaining 75 per cent. among women who had previously borne one or more children.

LAW OF ANTAGONISM BETWEEN GROWTH AND GENESIS.

I ask to be pardoned for occupying so much time in relating familiar phenomena, but my apology for so doing must be found in my desire to emphasise the unvarying truthfulness of an important biologic law, which must serve as the basis of the discussion to which I invite particular attention. This law may with propriety be designated as the law of antagonism between growth and genesis. It was formulated as early as 1851 by Carpenter,¹ the distinguished physiologist, in the following words:

There is a certain degree of antagonism between the nutritive and reproductive functions, the one being executed at the expense of the other. The reproductive apparatus derives the materials of its operations through the nutritive system, and is entirely dependent upon it for the continuance of its function. If, therefore, it be in a state of excessive activity, it will necessarily draw off from the individual fabric some portion of the aliment destined for its maintenance. It may be universally observed that, when nutritive functions are particularly active in supporting the individual, the reproductive system is in a corresponding degree undeveloped—and vice versa.

The same law is reaffirmed by Spencer² in the following words:

It is a general physiological truth, however, that while the building up of the individual is going on rapidly, the reproductive organs remain imperfectly developed and inactive; and that the commencement of reproduction at once indicates a declining rate of growth, and becomes a cause of arresting growth.

The application of these physiological laws to the explanation of sterility in obese women must be found in a study of the physiological processes underlying the accession of fat. I use the words "accession of fat" because I wish in particular to emphasize the fact that, in the presentation of this essay, the cases that I have particularly in mind are those in

¹Prin. of Phys. Genl. & Comp. 1851; p. 592.

²Prin. Biol. Vol. 11, p. 436, Section 341.

which there has been a change in type due to an increasing adipose, as distinguished from those other cases which are congenitally polysarcous. In these cases of acquired fattiness, there are limits in which the formation of fat may, with propriety, be designated as physiological; yet the pathological realm is invaded by and in consequence of the continued exercise of those functions which caused the deposition of fat in health. Indeed, the deposit of fat cannot be said to be a manifestation of disease until the process has been carried to that degree that the general equilibration of functions is thereby disturbed. The variation, mathematically expressed, in which fat may be said to be within normal limits is from 9 to 23 per cent. of the body weight. The proportion of fat to body weight differs as between men and women—the latter, by virtue of sedentary habits and in consequence of nerve modifications of the nutritive functions at various epochs, notably at puberty and the menopause, being more inclined to polysarcia. This is the result of my own observation and that of others, although Oertel expresses the relative proportions as being 16 per cent. for men and 13.5 for women. It must be remembered, however, that a mathematical expression of bodily conditions can be nothing more than an approximate indication of the *status vera*, if for no other reason than that the terms of the equation are constantly shifting, not only as between individuals, but in the same individual at different times and under different circumstances.

THE QUESTION OF CAUSE AND EFFECT.

The question, and not an unnatural one, as to which is the cause and which the effect in a given case of sterility co-existing with obesity is best answered by the history of the case. The antecedent condition may generally be assumed to be the causal one. Thus, in the case of a comparatively young wo-

man who takes on fat and whose increase of weight is followed by a corresponding decline of sexuality, there is a logical inference that the first condition is the cause of the latter. This assumption is confirmed when a successful treatment of the obesity is followed by a spontaneous return of the menstrual and reproductive functions. This has been the course of events in an interesting series of cases in my hands. While it is not to the purpose of a paper such as this to go into detailed case reports, I cannot resist a few brief summaries of records.

Mrs. G. B. H—, aged 32; married at 23. Menstruation and sexual sensibility normal at time of marriage, when she weighed 105 pounds. Within a few months after marriage she began to increase in weight, until, when she applied to me, September, 1892, she weighed 187 pounds. She had amenorrhea, sexual anesthesia, engorged vagina, shrunken uterus, was constipated and had never conceived. By March, 1893, she weighed 132 pounds, was menstruating regularly, and, within a few months, conceived. She has since given birth to two children.

Mrs. B. D—, aged 29; married at 18, and fourteen months later gave birth to a child, which she unfortunately lost. At the time of her conception she thinks her weight was under a hundred pounds. A year later, however, she began to increase rapidly, manifesting coincidentally a decline in her menstruation. At the expiration of another fifteen months she weighed 190 pounds and her menstruation had practically disappeared. This condition continued without essential change for five years. She was then subjected to constitutional treatment for eight months, after which she had lost 68 pounds. Her menstruation returned, and she conceived.

A number of other cases of the same character could be adduced from my own practice and that of others. My friend, Dr. F. Forchheimer, has given me verbal reports of two cases even more striking than the foregoing, in which the successful treatment of obesity has been followed by the spontaneous return of fecundity. These instances are offered only as illustrations of the operation of cause and effect. The reverse illustra-

tion is shown in the normal menopause in which the normal decline of menstruation is followed with an increase of fat—seldom, however, beyond the normal limit. In these cases the antecedent is manifestly the casual phenomenon, while the reverse of the order of events only serves to emphasize the reciprocal relationship between the generative and nutrient functions.

FAT FORMATION IN RELATION TO EQUILIBRATION OF FUNCTION.

The physiological conditions underlying the normal deposit of fat are those of abundant supply of nutritive material, normal digestive and assimilative functions, a free circulatory activity, an absence of excessive muscular exercise, a normal metabolism and the unobstructed elimination of metabolic products. But over and above these special conditions, there seems to be a trophic nerve control, the influence of which is reversely manifested in the emaciations consequent upon certain diseases involving the sympathetic, the vaso-motor or more specifically the trophic systems. The relative preponderance of the trophic nerve functions in the economy is found in the extreme activity of the nutrient functions during childhood and in their subsidence during senility. All the phenomena of growth are intimately associated with the phenomena of fat formation. When, therefore, in a mature person in whom the nutritive functions have attained a relative equilibration, and in whom there occurs a change of type due to the sudden accession of fat, there occurs, in all essential particulars, a re-establishment of the functions of growth, there exists a disturbance in the balance between waste and supply, the latter being in demonstrable preponderance. With this recurrence of growth we have a readjustment of function approximating the prepuberty standard. This is nowhere more manifest than in the reversion of the per-

haps once well-established genital function. Sexual desire, genital anesthesia and progressive amenorrhea are among the earlier features. These increase until they are brought to our attention as the clinical phenomena of a well-established case of sterility. In many of these cases the menstrual function, at first sluggish, entirely disappears; not only has the flow diminished in time, quantity and color, but in many cases it has entirely disappeared. In certain cases the menstrual molimen likewise disappears—the patient being no longer conscious of the impulse to menstruate. Instead of the recurring pelvic distress, the usual precursor of the flow, she is annoyed with “hot flushes” that so generally accompany the menopause. In certain other cases the menstruation becomes scanty, but it continues to appear irregularly at lengthening intervals, and is associated with pain generally in the ovarian regions. In a number of instances ovarian distress has been due manifestly to a futile effort at ovulation. At this juncture trophic changes are at times manifested in the uterus and ovaries, which shrink in an appreciable degree. The involutional change is also manifested, more or less, in a narrowing of the vagina, the epithelium of which becomes less and less. If the process is not interrupted these cases speedily terminate in the permanent and irremediable condition of a premature change of life.

It should be held in mind that the cases which I am describing are those that are presumably free from organic disease of the genitalia, and in which the conditions described are the result, manifestly of disturbances in the balance of nutrition. In these cases the first departure from health is shown in the change of type—in the sudden increase of fat—and its subsequent course is characterized by a decline of the genital function—corresponding to the progress of

the polysarcia. The increase of fat is thus associated with a lessening of fecundity, an observation as old as Hippocrates, who noted the frequent association of fat and infertility, particularly among the obese women of Scythia. It was a fact which seemed to have impressed Lycurgus, whose hygienic laws might well have been conceived with the special object of preventing obesity and consequent sterility among the Spartan women to whom he looked for soldiers.

THE NATURAL COURSE OF THE DISEASE.

The natural course of these cases is worthy of more detailed consideration than is embraced in a preceding paragraph on the question of cause and effect. I feel that this is the more important, because, the question of fecundity or infecundity aside, the various pathologic elements in the later stages of these cases combine in many instances to produce most disastrous ultimate results. If, therefore, in a given case we begin at that point at which there has occurred a disturbance in the equilibration of function, we shall discover a sequence of interesting phenomena. The vaso-motor influence, which intercepts ovulation and menstruation, seems to exercise an equally inhibitory power upon peristalsis. As a result constipation ensues. Elimination through the alimentary tract becomes correspondingly limited, while hyper-absorption from the contents of that canal ensues. There is, therefore, a double current of toxins flowing into the blood—the one consisting of ptomaines, leucomains, stercorin, etc., from the *primæ viæ*; the other, the uric acid series, including the xanthins and the paraxanthins derived from metabolism in the tissues. These agencies are each and all not only globulicidal, but are in an even more pronounced degree hemolytic. The most disastrous results are immediately manifested in the red-blood corpuscles and the hemoglobin

—the oxygen carriers of the blood. With a defective supply of oxygen the hydro-carbons fail of combustion and are deposited as fat. In this very condition, therefore, and notwithstanding the lessened appetite that always attends auto-intoxications, the deposit of fat increases apace. Its influence in turn is to induce waste of neighboring tissues by pressure, and thus to throw an additional current of hemolytic elements into the circulation. The most profound oligo-chromemia frequently ensues, and with it often the associated phenomena of hydremia. This is the genesis of anemic polysarcia.

On the other hand, there are cases in which there seems to be a compensatory development of the other emunctories. Every practitioner is familiar with the offensive perspiration of many of these patients—a state of affairs often attributable to the elimination through the skin of materials that ought to be carried off through the alimentary canal. As a consequence of this increased elimination through the skin and kidneys, and of some stimulation to the alvine current, the blood suffers less and the anemic state is averted. The deposit of fat in these cases goes on first, because of the primary disturbance in the trophic functions, and next, because of the consumption of food and fluids in quantities beyond the oxidising power of the blood. There is developed, therefore, a plethoric type of polysarcia.

The further course of these cases, whether of the anemic or plethoric type, is manifested by the progressive deposit of fat, not only under the skin and about the mammary glands, but around all of the splanchnic organs. The omentum becomes heavy and often extrudes by forcing itself through the openings, now dilated, in the abdominal wall, notably the umbilicus and the inguinal and femoral rings. The most serious embarrassments occur from the deposit of fat

in and about the heart, the contractions of which become less energetic. As a result, there is developed an anemia on the arterial side of the circulation, while there is developed an equally pronounced venous plethora. In the wake of this condition there speedily follow cardiac asthma, pulmonary congestion, associated with cough and expectoration, diminished secretion from both the skin and the kidneys—dropsy. Long before this condition is reached sexual intercourse is abandoned, if for no other reason, because of the stenocardia that it induces. In some cases a glycosuria, often transient, is developed, but in other instances it develops into a true diabetes mellitus. With all of these developing phenomena, however, there is a progressive decline of all that pertains to the reproductive act or power.

DIAGNOSIS.

In the diagnosis of sterility in these cases, it is important to take into account co-existent tributary conditions. Among these may be mentioned an unhealthy state of the endometrium, occlusion of the cervical canal due to laceration or displacement, malformation of the cervix or vagina, general pelvic engorgements, ovarian and tubal disease. The cases to which I refer do not depend for their infecundity upon these visceral states, which when found must be treated according to their special indications. But I want to urge that the diagnosis of these cases is not made by establishing the mere fact that a woman has taken on fat and that she has in consequence experienced a progressive decline in her sexual powers. The diagnosis involves a determination of many more factors. It is essential that the initial point of departure from the original normal standard shall be determined, and that the cause leading thereto shall, if possible, be ascertained. It is upon the determination of these facts alone that a rational

system of treatment can be inaugurated.

The diagnosis must go yet further and embrace the determination of the blood state, for it should be remembered that these cases are of both the anemic and the plethoric variety. In the determination of this fact, superficial indications are very delusive, for a thumping pulse and a florid complexion may easily co-exist with an impoverished state of the blood, while pallor is not inconsistent with plethora. For this purpose a careful examination of the blood involving at least counts of the red and white corpuscles and a determination of the hemoglobin are necessary—necessary not alone as a feature of the initial examination of the case, but as a means of determining its progress under treatment. The state of metabolism must be equally an object of precise inquiry, for upon a careful determination of facts pertaining thereto can one determine the eligibility of certain courses in medication, dietary, hydrotherapy, exercise, and the like.

These can be fixed only by careful investigation of the secretions, but particularly of the urine, for the determination of reaction, specific gravity and the presence of toxic products. Not a few of these cases are neurastheniac—a circumstance which must materially modify what would otherwise be a desirable line of treatment. Of course, it is not expected of me in a paper such as this to deal with the technique of these analyses—subjects now happily embraced in the elementary studies of all our medical schools. Nor is it necessary for me here to emphasise the importance of carefully investigating these cases with reference to the existence of fatty degeneration of the heart, of arterio-sclerosis, of atheroma and of allied conditions. It is, however, exceedingly important to take into consideration all facts usually embraced in a clinical history, and it is

of especial importance to give attention to the existing changes in the genital organs induced by the abnormal accumulation of fat. The mechanical results of fat deposits about the vulva may be such as to prevent successful coitus. I can recall several cases in which this state of affairs existed, and for the relief of which and other even more distressing symptoms I have had occasion to amputate the labia. In one case these structures, after removal, weighed nineteen ounces.

In a few cases warty growths—true condylomata—have developed as the result of constant irritation from urination, while the same cause is responsible for eczematous and other eruptive conditions of proximal surfaces, not only in the genital fissure, but in the neighboring folds. It is, however, exceedingly important to accurately determine the changes that may have taken place in the vagina, the uterus, and, if possible, in the fallopian tubes and ovaries. The vagina will generally be found congested, its rugæ emphasised, and its lumen diminished by pressure of the fat in the perivaginal connective tissue. As a rule, the passive congestion is so excessive as to stop all secretory activity in the vaginal glands and follicles, the canal being, as a consequence, hot and dry; while in other cases in which the venous engorgement is not so great, there exists a marked vaginal catarrh. The cervix is generally small as, indeed, is the entire uterus, while the endometrium may or may not be catarrhal. In the majority of instances I have found a lessened secretion in the whole genital tract. The atrophy of the uterus is generally a true involutional change induced in the first instance by trophic nerve influences arising in the disturbed equilibration of function, and, in the second, by the pressure of the deposited utero-pelvic and visceral fat.

On the other hand, in a limited number of cases, enormously en-

larged and heavy uteri are encountered—those in which the involutional changes arising from a disturbed balance of function are counter-balanced by the engorgement on the venous side of the portal circulation, the current in which is interfered with by the weight of the splanchnic fat and the sometimes enormous accumulations of feces in the intestines. In this latter class of cases, in particular, but occasionally in those of atrophy of the womb, uterine displacements of the most annoying and intractable character are often induced by the superimposed weight. The statement by Oertel that corpulent women frequently abort because of pressure of fat upon the developing womb, while true, has but little application to the particular class of cases that I am considering, for the reason that the latter but rarely conceive. When conception does occur in these cases, however, abortion at the third or fourth month is almost sure to ensue, just as would be true if the evolution of the womb were resisted by the presence of a fibroid or an ovarian cyst, either of which was already large enough to occupy the entire abdominal cavity. A statement, therefore, on the part of the patient that early in her history, *i. e.*, soon after taking on fat—she conceived and aborted, once or even more frequently, has a diagnostic value.

PROGNOSIS.

The prognosis of these cases never can be given oracularly if for no other reason than that much of the result depends upon the intelligent and persistent co-operation of the patient herself. With reference to the correction of acquired obesity of this variety, it may be said that practically every case may be cured; while with reference to the restoration of the genital function, a more guarded answer must be given. As the result of my experience in these cases, I am forced to say that those presenting

the symptom of genital anesthesia are the least amenable to treatment, although I have seen repeated instances of satisfactory restoration of sexual sensibility. These cases, however, should always be considered with reference to their previous duration, early cases being more amenable to treatment than those of long standing. Plethoric cases are more easily cured than those associated with anemia; while the least tractable of all are those complicated with neurasthenia.

With reference to the latter cases, I would not leave the impression that they are not curable, for, on the contrary, recoveries under such circumstances are common. In consequence of the co-existence in them, however, of contrary indications for treatment, both dietetic and medicinal, the time involved in their cure is necessarily much longer. But little can be accomplished in any case, neurasthenic or otherwise, in less than from six months to a year. Much of the prognosis depends upon the surroundings and discipline of the patient. If all of the desired and necessary conditions could be commanded at the patient's home, she would do better there, busied with her every-day activities, but unfortunately there cannot be secured at home the dietary, the massage, the electricity, the baths, and the attendance, and particularly the daily, and sometimes almost hourly, examinations and analyses necessary for a proper management of the case. On the other hand, residence under the depressing surroundings of a hospital, public or private, is frequently most disastrous. I have generally placed these cases, for a time at least, away from their own homes, but in a private residence, having a cook who knows how to prepare the prescribed food, an attendant who is intelligent, a masseuse who can follow directions, and withal, where there is a cheerful, sunny atmosphere in which the patient may live a natural and cheerful life. After a few months of residence

under such circumstances these patients may with safety be entrusted to continue the treatment at their homes. I cannot refrain, however, from emphasizing the importance of a guarded promise, if one be given at all, in all cases in which atrophic changes have manifested themselves in the uterus and adnexa. In this class of cases there is always extreme difficulty in reversing the nutrient tendency as manifested in the shrinkage of these organs.

TREATMENT.

The treatment of sterility due to obesity in women must begin logically with the causative condition, but it must take into account at the same time the functional inertia of, or the trophic changes in, the genital apparatus. It naturally divides itself into (a) constitutional and (b) local. The constitutional treatment must vary according as the case may be anemic or plethoric, simple or complicated, and must embrace a consideration of diet, exercise, bathing, medication and general personal hygiene; while the local treatment must embrace all resources that are calculated to overcome manifest pathologic states and to re-establish the functional power of the genital organs.

DIET.

No diet should be employed case in and case out, without more or less radical modification to meet the requirements of the individual patient. I will go a step farther and say that any attempt to apply any one of the numerous so-called systems, in a routine way, is fraught with hazard, for, in certain organic and even functional states, no agency can be more potent for sudden evil than that of diet. These considerations prompt me to refrain from giving a detailed statement of articles of diet, much less a bill of fare for the different meals of the day. I feel, however, that it is important to give the general prin-

ciples upon which my system of dietary is based.

In the first place I recognize as a fundamental law that the prescribed diet shall consist of elements calculated to meet the demands of the system under the existing conditions of nutrition. The basis for proceeding according to this rule must be the average diet of the average individual under average circumstances. This, of course varies, even in the normal subject, as indicated by the results of different investigators. Thus, with regard to albuminates, Ebstein places them at 100 grams, while Oertel places them at 179. Moleschott places the carbohydrates at 404, while Ebstein gives them at 50. Banting designates the fats at 10, while Moleschott places them at 84. My own experience, based upon a considerable number of cases, prompts me to cling to the rule which I early adopted for my guidance, *i. e.*, an average based upon the results arrived at by Voit, Oertel, Ebstein, Banting and Moleschott, whom I recognise as the five most careful observers. The average diurnal food requirement, according to this rule, is as follows:

	Maximum.	Minimum.
Albuminates.....	143.8	139.
Fats	52.6	49.6
Carbohydrates ..	161.8	153.8
	<hr/> 358.2	<hr/> 342.4

To adjust a diet upon this basis, it is necessary next to take into account the amount of these elements contained in the respective articles of diet. This is shown in respect of a few common articles in Hoffman's table, which I quote from Thompson's excellent book as follows:

Nitrogenous Constituents.	Fat.	Carbo- hydrates;	Sales.	Total.
51.4	45.6	3.0	100
89.4	5.5	5.1	100
27.3	0.8	68.9	3.0	100
16.6	0.9	81.9	0.6	100
7.7	0.4	91.2	0.7	100

This list might be indefinitely extended, but the foregoing articles subserve the purpose of illustration and bring out in contrast the food properties of the various elements of an ordinary diet. Convenient analytical tables embracing all the leading articles of diet, which would be out of place here, may be found in the text-books. As I have before stated, the daily diet to be selected in any given case should take into account the relation of the constituent chemical elements to those embraced in the diurnal demands of the system. Thus, in the process of reducing obesity in plethoric cases, the albuminates should be kept at the maximum standard, while the fats and carbohydrates should be brought as much below that point as possible. This rule is made necessary by the necessity of maintaining the bodily strength while the accumulated fat is being burned up to maintain the bodily heat. On the other hand, in anemic cases, particularly in those with hydremia and low temperature, it is often imperative to maintain the bodily heat for a time at least by a diet abounding in calorific elements. It is often necessary under such circumstances to estimate in calories. No combination of articles should be selected which represents less than 1,200 nor more than 2,600 calories. With a diet of this character, reliance should be placed upon the withdrawal of fluids for the reduction of weight. Then, too, there is a third distinct class of cases, *viz.*, those in which, associated with fat accumulation in the tissues, there is also an accumulation of nitrogenous derivatives in the blood. These embrace the entire congerie of hemolytic toxins. In these cases it is often necessary to shift quite to the other side and to effect a reduction of weight with a diet in which an excess of fluids plays a conspicuous part.

Thus, in these uric acid cases associated with headaches, migraine, etc., it

is my rule to flush the kidneys each morning upon arising with from .05 to 1 litre of clear water, preferably distilled water. The resulting secretion of urine shows that there is an entirely compensatory elimination of water by the kidneys. This excessive secretion is often found to be laden with urates. On the other hand, the plethoric cases demand milk, the water from which is freely eliminated by the kidneys, while the retained albuminoid elements are not sufficient to maintain the body heat without the combustion of some of the accumulated fat.

It follows, therefore, that the diet list must be studied as is the *materia medica*, and the various articles should be selected with reference to the different indications of different patients, or, indeed, from time to time the varying conditions of the same patient.

EXERCISE.

Exercise is of very great importance and should be prescribed with constant reference to the fact that the case on hand is not alone a case of obesity, but one in which the pelvic state is to be taken into account. Exercise, therefore, which may involve lifting or straining, may, by inducing forcible contraction of the abdominal walls, add to the splanchnic weight already superimposed upon the uterus and thus cause or aggravate decensus or other displacements of that organ. Exercise of a general sort, such as walking, should be enjoined with reference to the condition of the heart, the lungs, and especially with reference to the general powers of endurance. It is of extreme value in promoting bodily heat, and thus inducing combustion of the fat. When active exercise is not available, however, that of the passive variety, such as massage and Swedish movements, should be employed. It is my invariable rule to employ this method of exercise in these cases as a supplement to any active exercise that

may be taken, for by this means alone special deposits of fat can be influenced and special muscular atrophies can be remedied. Passive exercise should be prescribed with reference to stimulating nutrient activity within the uterus and adnexa.

In plethoric cases, and even in anemia ones in which there does not co-exist a prostrating auto-intoxication from the retention in the blood of nitrogenous derivatives, active exercise is of value. Walking across fields and climbing hills is vastly better than promenading on sidewalks. I have seen damage done, however, by intemperate or ill-advised walking, particularly in cases having a fatty heart—a common complication under these circumstances. Exercise should, therefore, be prescribed with the same precision that one would display in advising any other agency of cure. Passive exercise in the form of massage or Swedish movements is essential in many anemic cases, particularly in those complicated with neurasthenia, in which the bodily strength will not permit of more active movements. Massage of the pelvic organs by the bi-manual manipulation is a most valuable adjunct in re-establishing their nutrient activity.

ELECTRICITY.

Allied to exercise in its modifying influence upon nutrition, local and general, is electricity. This agent in the form of general faradization, and given in a saline bath, has a valuable influence in promoting the activity of tissues weakened by the deposition of fat and the continued pressure. It probably has a valuable influence in promoting the absorption of the deposited fat. Faradization of the arms, legs and abdominal muscles for a little while each day is a good form of exercise, but of far less value than massage skilfully applied. Local faradization of the uterus with the negative electrode within the organ, the whole pro-

cedure being surrounded by the most careful aseptic precautions, is of value in re-establishing the premenstrual afflux of blood to the pelvis and thus re-establishing the waning menstrual function. For this purpose the applications should be made for fifteen minutes daily during the week preceding the expected menstrual flow. Galvanism and franklinism have but little other than a moral effect upon the patient. Imbert de la Touche, of Lyons, recommends electricity as of value in these cases with marked neurotic tendency. He finds the static electric bath the best, and reports that he has re-established the nervous equilibrium by this agent alone.

BALNEOLOGIC TREATMENT.

Baths are of great importance in managing these cases, yet I know of no agencies that demand more intelligent discrimination in their application. On general principles, cold baths are favorable to fat reduction, as they cause an extraction of bodily heat and thus provoke a compensatory combustion of calorific elements already within the system. In this way it may be said that cold baths burn fat. But if these same cold baths are employed in cases in which the blood is laden with nitrogenous derivatives, neuralgias and rheumatoid affections are almost sure to ensue. In certain intrapelvic hyperemias and other visceral congestions so generally present in fat people, fatal complications may follow the administration of a cold bath. This is especially true with reference to certain renal states. I have seen a fatal uremia result from the injudicious use of cold baths. In many cases, particularly in neurastheniacs with hydremic tendencies, it is often important to give hot baths for diaphoretic purposes. It should be remembered, however, that

the extraction of fluids under such circumstances is very rapid, and that embarrassing syncope should be averted by administration of abundant water at normal temperature. Iced water under such circumstances is uniformly pernicious. As the nitrogenous derivatives disappear from the blood and as the hydremic tendency diminishes, the character of the baths may gradually be changed until the temperature reaches 70° F. or even lower, and fluids may be withdrawn largely from the diet. These changes must be prescribed from day to day by the attending physician and always with reference to the ascertained blood state. It should be remembered that the time has passed for mere guessing in these cases, and that it is imperative upon the medical attendant to employ methods of precision in determining the actual state of his patient.

MEDICINAL TREATMENT.

The most that can be said for medicinal treatment in these cases is that it must occupy a subordinate or at best a very incidental place. I avail myself of the very first opportunity, however, to inveigh against the fat-reducing agents, such as the phytolacca decandra and the emmenagogues, such as aloes, myrrh and especially the essential oils. The employment of such agencies is illogical, empirical and necessarily hurtful to the patient. It were entirely futile in this connection to enter upon a detailed consideration of the adaptation of special remedies to special conditions, although this represents the beginning and the ending of the utility of medicines in these cases. "A course of depletion," or "a course of iron," or "a course of tonics," or a course of anything else, is to be looked upon as reprehensible. The intelligent physician will prescribe his medicines to-day for the indications of to-day.

ON THE CLOSE RELATION BETWEEN THE NASAL AND CRANIAL CAVITIES AS A CAUSE OF BRAIN DISEASE.

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THE close proximity of the nasal and cranial cavities has been brought to my attention many times while removing the brain from its natural position in the human body. Time and again in trying to preserve the dura at the base of the brain and while dissecting off the dura from its bony attachments, I have unintentionally opened into the nasal chambers, and have wondered at the pathological conditions existing in the anterior fossæ of the skull. A more careful examination would make clear that, careful as I was, I had broken through the cribriform plate of the ethmoid, and was delving into the mysteries of the nasal instead of the cranial cavity. Their relationship, as I have had opportunity to observe, is of the most intimate character, and the results of this intimacy are of serious and far-reaching import.

The cribriform plate of the ethmoid—a thin, brittle lamina of bone about the thickness and fragility of common stove mica—forms part of the base of the cranium and is separated from the brain by only a single layer of the dura. It is, moreover, perforated by numerous foramina which permit egress of the olfactory filaments going to the upper third of the septum and over the surface of the superior and middle spongy bones of the nasal fossæ. The mucous membrane covering the roof of the fossæ is closely adherent and very thin, adding no very important or impenetrable barriers between the two cavities.

Anatomists of old, and a goodly majority of the laity at the present time, recognised the "open door" arrangement of these two cavities and believed, as many do even to this day, that the watery secretions from the nose came from the brain, and that after a copious secretion the brain becomes relieved, leaving, as a consequence, the individual more clear-headed. Their deductions, in part, absurd as they may seem, may not be altogether fallacious, as we shall see in studying this question somewhat more closely.

The close kinship between these two cavities—the one the most guarded and protected in the body, the other the most open and exposed—must suggest some interdependence, some interchange of function, of their respective contents. The nose certainly does not receive any benefit from its neighboring organ except its quota of nerve supply. The brain, on the other hand, at first sight would seem to ask even less of the nose than *vice versa*; but what of the currents of air rushing backward and forward through these nasal channels? It has been proven that the cribriform plate of the ethmoid is not impervious to oxygen; then is not osmosis possible between the nasal and cranial cavities through the cribriform plate? And is not the structure of this plate so wisely designed as to permit some circulation and consequent direct aeration of the brain?

This fact is so patent to me, both physiologically as well as pathologically, that we might speak of these plates as

the ventilators of the brain—each ventilator acting for its respective hemisphere—inasmuch as the falx cerebri is attached to the crista galli which divides the cribriform plate into two lateral halves. This view is at variance with the commonly accepted ideas of laryngologists and rhinologists, but appeals to me so strongly that I do not hesitate to express my views publicly.

W. Meyer was doubtless the first to point out the evils of deficient nasal respiration and its baneful effects upon the brain and mental development. Guye first pointed out that aprosexie, or the inability to concentrate the attention for any length of time upon one subject, followed the clogging of the nasal chambers. Seiler and Bresgen were also pioneers in this line of work. The *modus operandi* of this influence is explained by them as due to the obstruction of the lymph and bloodvessels in the brain and nose.

Ziem found, by sewing up the nostril of young animals, that the side of the head corresponding to the occluded nostril was mal-developed. This retarded development affected the brain, face, eye and pharynx. The changes in the affected eye were interesting to note; the orbit of the affected side was smaller, the field of vision narrower and the refractive power less. If the eye on the normal half be emmetropic, the affected eye will be hypermetropic; if myopic, then the affected eye will be slightly myopic or emmetropic. As a rule the affected eye will also be astigmatic. Ziem also found a close relationship between certain mental disturbances and nasal troubles, especially affections of the accessory cavities, determining perturbations in the circulation of the frontal region of the brain.

It has been demonstrated on autopsy that where obstructions of one nasal fossa had existed for a long time, thereby preventing adequate ventilation, the

hemisphere of the brain on that side was imperfectly developed or retarded, as compared with the hemisphere on the side where nasal ventilation was unobstructed. The effect of nasal obstruction upon the mental development of children is well known to all rhinologists; the peculiar mental hebetude, perhaps apathy with general lassitude, weariness and incapacity for mental work or mental effort, in mouth-breathers due to bony obstructions, hypertrophied tonsils, nasal polypi and the like, are known to all physicians.

Children with pharyngeal adenoids, thereby causing improper nasal respiration, are afflicted with symptoms far more serious than the importance of these growths warrants. Some of these symptoms have been ascribed to reflex disturbances; possibly that is true, but many of them, especially those indicative of cerebral involvement, are caused by the non-ventilation of the nasal and cranial cavities.

A striking case of this nature came under my personal observation lately, occurring as it did in one of the little members of my family. The patient, a healthy girl, had developed up to the fifth year at the same rate and to the same capacity as girls are wont. She was well developed physically, without any of the stigmata of degeneration; dentition, ambulation and articulation each occurred at their proper interval of time. She was bright, active, playful, her spirits buoyant, and gave promise of a brilliant intellect. Suddenly a change came over her; she became dull, stupid, listless, could not remember her letters, could not spell simple words of three letters, did not care to exert her mind and was slowly but certainly becoming somewhat idiotic. She became a mouth-breather, would snore at night, and began to lose in flesh and appetite. The former intellectual facial expression gave way to one of dulness, and it was evident to all

with whom she came in contact that instead of progressing she was retrogressing.

Surmising after a period of time that perhaps adenoids were present, she was examined and then operated on. The change in her mentality was almost instantaneous. It seemed as if her mental faculties had been suppressed for the time being, and, when relieved, broke forth with surprising fertility. It was now necessary to restrain her. She would remember verses without effort, and in a few weeks took her place at the head of her class in school. The vegetations removed were very small, and but for the deficient nasal respiration it did not seem possible that they could account for all the disturbances noted.

The effect of temporary closure of the nasal fossæ is plainly seen in brain workers suffering with a cold in the head. Their most bitter complaint is that they feel dull, their minds are inactive, it is hard for them to think, mental work is an effort—symptoms referable to some impairment of the frontal lobes of the brain.

To find some cause for this peculiar condition, it is necessary to study the arterial supply of the brain, but more especially of the frontal lobes. Laryngologists and rhinologists claim that it is not so much the improper ventilation of the nasal fossæ as it is obstruction to the lymph and blood vessels going to the brain, caused by adenoids, hypertrophied tonsils and the like.

The frontal lobes of the brain receive their arterial supply cortically from the middle cerebral arteries through the subfrontal and precentral branches. On the basilar surface they are supplied by branches from the anterior and middle cerebral arteries, both taking their origin from the internal carotids. It is, therefore, not from any interruptions in the arterial supply of the frontal lobes that these disturbances ensue, but instead from the small venous branches passing

from the fossæ through the apertures in the cribriform plate and emptying into the superior longitudinal sinus—if this explanation be the correct one. To me something more is necessary, because when there is deficient nasal ventilation, due to conditions not affecting these nasal veins, as hypertrophied tonsils, closure of the nostrils and the like, frontal lobe disturbances are observed to the same extent and with the same intensity. It seems to me, therefore, that the currents of air and the replenishment of this air in the superior nasal fossæ is of considerable moment, either in its effect upon the blood passing through the apertures in the cribriform plate or else in osmosis of oxygen and its direct action upon the frontal lobes.

Now turn to another phase of the subject and see what drawbacks, what dangers, are attendant upon such a nasocranial alliance. The nose, as has been stated, is the most open and exposed cavity of the body. It receives or should receive all the inspired air, serving at the same time as a filter for all kinds of fine detritus from organic and inorganic matter, carrying with it all kinds and forms of germ life, infecting and disorganizing through contact its own secretions, thereby setting up a nidus for further propagation and infection. Its mucous membrane makes a very comfortable, hospitable abiding place for many forms of pathogenic as well as non-pathogenic micro-organisms. Passive in its function as well as action, supplied with warmth as well as moisture, it facilitates their growth and development, thus offering extraordinary inducements to these little settlers, which, as we shall see, are not slow or backward in accepting such generous bounties.

According to Sternberg, the following species have been obtained from the nasal secretions:

Non-pathogenic.—*Micrococcus nasalis*

(Hajek); *diplococcus coryzæ* (Hajek); *micrococcus albus liquefaciens* (Von Besser); *micrococcus cumulatus tenuis* (Von Besser); *micrococcus tetragenus subflavus* (Von Besser); *diplococcus fluorescens fetidus* (Klamann); *micrococcus fetidus* (Klamann); *vibrio nasalis* (Weibel); *bacillus striatus flavus* (Von Besser); *bacillus striatus albus* (Von Besser).

Pathogenic.—*Staphylococcus pyogenes aureus*, *staphylococcus pyogenes albus*, *streptococcus pyogenes*, *bacillus* of Friedländer, *bacillus* of Rhinoscleroma, *bacillus fetidus ozenæ* (Hajek); *bacillus mallei* (Löffler); *bacillus smaragdinus fetidus* (Reinmann). In culture experiments made by Von Besser, Wright and others, the nasal mucus was found to contain a great variety of bacteria; among others, the pus cocci were frequently found by both of the observers mentioned.

In 81 cases Von Besser found the *diplococcus pneumoniae* 14 times; *staphylococcus pyogenes aureus*, 14 times; *streptococcus pyogenes*, 7 times; and Friedländer's *bacillus*, twice. Twenty-eight of the cases examined were convalescents in the hospital. Among these the pathogenic species mentioned were found less frequently than in the other individuals. The following non-pathogenic species were isolated: *micrococcus liquefaciens albus*, in 22 cases; *micrococcus albus*, in 9 cases; *micrococcus cumulatus tenuis*, in 14 cases; *micrococcus flavus liquefaciens*, in 3 cases; *bacillus striatus albus*, in 10 cases.

Paulsen (1890) made 31 cultures in nutrient gelatin from 16 persons, and 33 in nutrient agar from 22 persons, with the following result: eleven remained sterile, 19 showed not more than 10 colonies, 16 less than 100, 12 more than 100, and in 6 the number was so great that they could not be counted.

Micrococci were more numerous than bacilli; of these a "sulphur yellow coc-

cus" in tetrads was found in 8 individuals. Various species of liquefying cocci, resembling the pus cocci, were isolated, but the conclusion was reached that none of these were identical with the staphylococci of pus, which Von Besser and Wright both found in a considerable proportion of the culture experiments made by them. Straus (1895) examined the nasal secretion of persons associated with tubercular patients for the purpose of ascertaining if the tubercle bacillus was present. The presence of this bacillus was demonstrated by inoculation into guinea pigs in nine healthy individuals out of 29 examined. Two of these were physicians and six were nurses.

Vansant, of Philadelphia,¹ gives a brief report of the results of a bacteriological investigation of the nasal mucus in 100 cases of chronic nasal discharge. Of the 100 cases examined the Klebs-Löffler bacillus was found in 26, 11 of which had atrophic rhinitis, 3 purulent rhinitis, 5 in simple rhinitis, 3 in nasal syphilis, and 3 in hypertrophic rhinitis. In 58 cultures staphylococci were found. No cases were examined which showed any symptoms of diphtheria. His conclusions are that in a large percentage of chronic nasal catarrh, the secretions are infected with diphtheria bacilli, staphylococci and the like.

It is more to the consideration of the question of the germs of meningitis gaining access to the cranial cavity, through the nasal, that I wish to invite attention. Schiff² recalls the fact that epidemic cerebro-spinal meningitis has long been known to begin with violent rhinitis, evidences of which are often found on autopsy. After the discovery of the meningococcus intracellularis in the nasal discharges of meningitic cases, it became

¹ Journal of the American Medical Association, Feb. 27, 1897.

² Centralblatt für innere Medicin, June, 4, 1898, American Medico-Surgical Bulletin, Oct. 17, 1896.

the custom to examine for this parasite as a routine measure, and many physicians have invariably found it. Then observers began to examine non-meningitic cases to determine whether this parasite, like the pneumococcus, was present in the healthy subject. The earlier investigations having been inconclusive, Schiff was led to look into this matter, and in the nasal mucus of 27 healthy patients found the meningococcus seven times. Cultures proved virulent to guinea pigs. The fact is established that the parasite occurs much oftener than it infects, and there has long been a conviction that epidemic cerebro-spinal meningitis is spread by the nasal mucus. The curious fact that typical cerebro-spinal meningitis has often followed fracture through the base of the skull is readily explained by the passage of the germ through the breach. In an extended article on meningitis in children by A. H. Wentworth (*Boston Medical and Surgical Journal*) the author reports in detail 11 cases, proving that primary cerebro-spinal meningitis is caused by the diplococcus intracellularis meningitidis, and in some of these cases this germ was found in the nasal cavities.

In an article on cerebro-spinal meningitis, in *Medicine*, Dr. Scherer arrives at the following conclusions: The infection in epidemic meningitis may take place by way of the upper air passages. The mode of infection seems to be that the non-mobile diplococcus is taken up by leucocytes, and thus carried through the lymph spaces to the brain and its membranes. Demonstrations of the diplococcus may be of value in arriving at a diagnosis in doubtful cases. The earlier the examination is made, the more are the chances of finding the organism. The observations have not been numerous enough to decide the persistence and duration of virulence of the diplococcus in the nose in these cases.

The nasal secretions of meningitis should be considered infectious and handled accordingly. In a similar way the presence of diplococcus of pneumonia and streptococci may be expected to be found in cases where the infection is through the inspired air.

To draw a moral from the study of this question, showing that the nose and brain are intimate in their anatomical associations, in their physiological activity, and lastly in their pathological misfortunes, I desire to make the plea for a more careful attention to be given the nasal mucous membrane. We cleanse sedulously the surfaces of the body—the scalp, the teeth and buccal cavity, and, for cleanliness merely, the rectum and the vagina, and yet never dream of applying any lotion to the most dangerous and filthiest of all cavities, the nasal. This, perhaps, has been due to our early education of lavage; if so, then our children and patients' children should be taught that a nasal toilet is a part of the daily toilet. Seiler (*N. Y. Med. Jour.*, July 18, 1896) calls attention to the fact that it is no more difficult to teach a child to cleanse the nostrils and anterior cavities with an appropriate wash, than it is to teach them, as is done in every family, to use the toothbrush. Phillips, in following up this question, recommends warm medicaments, not strong enough to cause pain, to be applied daily.

Farber, in the Cincinnati *Lancet-Clinic* for Jan. 16, 1897, writing on the toilet of the nose, says:

It follows, then, that the long-neglected nose should have most careful attention. It should be as systematically cleansed as are the mouth, the teeth, the ears, the rectum, etc. In America, in all large cities and towns, and, for that matter, in every country, our streets are made receivers of all kinds of animal and vegetable matter, fresh and decayed, and this fine dust assails our nostrils from morning until night, laden with all sorts of bacilli and microbes and disease-germs. It is therefore suggested that our noses should be

prepared each morning for the exposures of the day. Let them be oiled up for their duties and strengthened to resist the deadly germs everywhere so prevalent.

The old Dobell's solution has been found most satisfactory of all for cleansing and disinfecting the nose. It should be used warm and in small quantity only, each morning, to

be followed by a very bland oil, such as liquid vaselin, in small quantity. By such prophylactic measures our various forms of catarrh will disappear largely, and with them many other affections of contiguous cavities and structures, as well as promoting the general health. Even the sudden acute coryzas may be materially lessened in severity.

HYGIENE OF THE BEDROOM AND BEDSTEAD.

BY LAWSON TAIT, F. R. C. S., M. D.,

Birmingham, England.

THERE is no article in ordinary life-long use with which we are so closely related, with which we spend so much of our time, which we occupy with such affectionate readiness and leave with such affectionate regret, as our bedstead. Yet how little care is given, certainly but little was given even in the recent past, to the principles of its construction and use; so that personally I feel that everything between the primitive Scotch box-bed filled with a good elastic truss of well-dried heather and one of Whitfield's Ideal Bedsteads, introduced by that firm as a hospital bedstead with my own name attached, there is nothing to choose. Both of these have excellently well carried out the first necessities of health and comfort, and all between had better be given up. This is the theme I propose to discuss in the following pages, combining in my narrative of the "bedstead as a factor in sanitation," some advice which I regard as wholesome and much needed in the general management and arrangement of our bedrooms. That this advice will be successful I have little doubt from the widespread revolution caused by a little paper which I wrote some twenty years ago on "Bedroom Ventilation," out of which has grown the whole army of auto-

matic ventilating and heating arrangements, combined with and made into stoves of all kinds, gas and coal burning. Had I patented the suggestions in that paper, I had now been more than a millionaire, but I do not regret that I gave my plan free to the public, as I now give my notions on bedroom management.

It is always useful and full of interest to trace the evolution of any object, whether in the animal form or in the ordinary use of humanity—and the growth of the bedroom and the bedsteads have their interest like other things. From the time of the cave dwellers through the various stages of savage and nomad life, the dwelling space was used for all purposes in common, and it is only after the wandering hunter has achieved fixity of tenure and residence that he discovers the advisability of shutting off part of his house as a sleeping place. This becomes easier as he learns how to use the more permanent kinds of building materials, timber, brick and stone; and as his skill grows so does the fixity of possession and its continuity by descent; so that it practically follows that the bedroom appears with the pursuit of land tenure and culture and the erection of permanent houses. This brings us into the midst of advanced civilization

in which in Britain probably we were left by the Romans, the construction of whose bedrooms and bedsteads are quite well known, though neither were well adapted for permanent use in such a climate as ours. Even with the help of the efficient hypocaust, the comfort of both in Britain must have been difficult to maintain; and when the skilled Italian artificers disappeared from our country in the fifth century we probably went back to the bundle of ling and its skin covering as the ordinary kind of bedding.

The Normans brought back a better kind of domestic building, and when the settlement of the country, toward the fifteenth century, made domestic architecture possible for others than the Norman barons, the English yeoman adopted for his buildings the only material at his hand, the rough oak of his native woods combined with the dab and wattle still seen in the interstices of the beams even to this day, formed from the osiers of the meadows and the mud from the river side. The Norman nobility, as we know from old drawings and tapestry representations, used single bedsteads such as are used on the Continent now. The castles in which they lived were massively built of stone by guilds of imported masons. The floors were level and the doors could be made quite square and fitted fairly well. The windows were provided in the main rooms with well-fixed glass, and at other times with well-made outer shutters, so that the chambers of a Norman castle, with their large fireplaces abundantly supplied with wood fuel, must have been exceedingly comfortable habitations. The enormous thickness of their walls secured a very fair uniformity of temperature, and the downfall of cold air from the walls was modified by the hangings of tapestry. For their bedsteads there was no need of hangings, and, so far as I can find out, they did not use them. But the Saxon farmer had to build his dwell-

ing on lines determined by the curves of the beams at his disposal.

The quaint and picturesque twists of a fifteenth century "oak and wattle" building are not the results of "settlement" or bad workmanship, and the inequalities of floor level were determined, not by eccentricities on the part of the builder, but were the best he could do with his material. Casements, therefore, and doors could rarely be made true and closely fitting; in fact, they never were till late in the sixteenth century, when we find the beautiful panelings coming into use. "Draughts" in bedrooms must have been, therefore, the rule, and not the exception, alike in manor and in farm house. In the former, as I have said, they arose not from badly fitting doors and casements, but from the downfall of masses of chilled air from the stone walls, and, therefore, tapestries were hung round the rooms to keep warm the occupants of the little Norman bedsteads. The farmers could not afford the costly products of the French looms, and their women had something else to do than spend their time over the tambour frames. Therefore, a smaller apartment was constructed inside the bedroom in the shape of a huge four-post bedstead hung round with curtains probably of common homespun serge, or the box-bed of the north was employed, though no trace of this has been found, so far as I know, south of the Humber. Into such contrivances a whole family must have crowded, possibly with the addition of occasional visitors. This, of course, is an occurrence common enough even now in outlying Highland districts, where the box-bed, with its complete set of shutters, still is in common use.

Such a survival as the Great Bed of Ware, dating certainly from the reign of Henry VII., and perhaps earlier, measuring twelve feet square, represents this first instance of the "room within a room," which was still in use in the vast

majority of the well-to-do houses until the beginning of the series of "Great International Exhibitions." Between 1851 and 1861 the French taught us the use of single bedsteads, and we introduced washstand basins and other lavatory arrangements to their notice; whilst the only permanent advantage either of the nations gained from the Crimean War was the use of the bath and bathroom, taught us by the Russians, widely used now in this country, not so widely in France. The Great Bed of Ware, still preserved in the old timber and wattle Rye House Inn at Hoddesdon, is traditionally said to have accommodated twelve men and their wives; and if we may judge from what Howard records early in this century as the custom in hospitals and workhouses of the continent and this country, as well, in certain places, the statement about our fifteenth century carved oak bedstead need not be regarded as any exaggeration, and we need not wonder at outbursts of plague and pestilence arising directly from such causes. Nor does the moral atmosphere which probably arose from such habits require explicit illustration.

The dawn of domestic sanitation as we now know it occurred as late as, I have already said, in the fifties, and was not fully appreciated till well on in the seventies. Bathrooms began to be added to our houses. We still had grates in our best rooms, with closing registers, so as to preserve that pernicious bedroom odor familiar in all sleeping rooms badly ventilated. The albuminoid substance which produces this smell, in my belief, is the initial stage of the growth of the poison of typhus fever. Four-post bedsteads were still in very common use in the seventies, but the curtains had become mere survivals, as seen in a valance along the top rail and hangings about a yard wide at each corner, only sufficient to show what had been their original purport, but quite

ineffective to keep off the draught which at that time was an essential feature of our English bedrooms. The bed I am describing was a large, ungainly object, expensive and uncomfortable, fitted with wooden slats, which resisted all movement, and exercised their uncomfortable influence through the thickest of mattresses and feather beds. The bedstead was, of course, made of huge slabs of wood, into the interstices of which vermin sought and obtained access, and, once there, could hardly ever be exterminated.

I remember very well that in London it was, one might say, the rule to have vermin in all bedsteads used by the public, as in hotels and lodging houses, and private houses were by no means uniformly free from them. Bugs were the subject of chronic jokes in all humorous writings and in pantomimes, whilst at this present advanced period of the development of sanitation they are never alluded to. This is one of the minor improvements, minor in name perhaps only, which have taken place from the persistent arguments in favor of the simple and effectual cleanliness which is the gospel of all true sanitation.

The first step in the right direction was the introduction of metallic bedsteads, and I remember very well the furore of indignation with which they were met—for nothing annoys an Englishman so much as any interference with his personal habits or belongings. Arguments of the most ridiculous and improper kinds were used on all such occasions. Thus, I have heard it urged by men who were otherwise sane that they would not have gas fires because they could not spit in them, and could not poke them. But metal bedsteads have had their way, and now a house furnished with wooden bedsteads is looked upon with suspicion, and a hotel so provided would have but scant favor in popular estimation. But the old form of bedstead was imitated,

of course, as closely as could be, just as the old chariot was imitated in our first railway carriages. The old wooden slats were replaced by a cross-work of iron laths, as rigid and uncompromising as their predecessors. The "half-tester" continued the survival of curtains quite useless, but of great comfort to the English housekeeper, as unintelligible as that "blessed word, Mesopotamia." Then the bedsteads must be double, to hold two people, in spite of the warning lessons bestowed on every household every time a member of it had an attack of illness. The additional comfort obtained by every English man and woman on a visit to the Continent where they found in their bedrooms two snug little single bedsteads placed side by side, made no impression till about ten years ago, when a few venturesome islanders began to dare the breath of scandal by having separate beds. There can be no doubt that this was the reason why the improvement was resisted, for to this day the proof of the worst that can be circulated concerning a married couple is that "they occupy separate rooms." Separate beds was, and is, to some extent, still regarded as almost as scandalous. Yet in all the best houses in our country each bedroom has attached to it a "dressing-room," with a single bed in it, and by this a great increase of comfort and health is attained. Now that we know that consumption is a disease communicable from one to another by contact and breathing the air already breathed by the consumptive, this hygiene of separate beds ought to receive some public recognition. For centuries the Italian physicians have taught the possibility of the disease spreading from husband to wife and from one person to another, when a tainted and a healthy person have occupied the same bed, and there are doubtless many other diseases of which the same is true.

Having now roughly indicated what a

bedroom and a bedstead should not be, let me try to show what they should be, and what they easily may be made; and that it is a matter of real urgency to personal health and comfort must come home to everyone when it is remembered that from the beginning of life to its end we spend more than half our time, and its saddest moments, in our bedrooms and in our beds.

First of all, the capacity of a bedroom should be such as to allow of at least 2,000 cubic feet for each occupant. It should have a flue of at least six inches in clear diameter, and this flue ought not to be in an outside wall, otherwise the chimney is sure to smoke when there is a fire, and it will fail as an up-cast shaft at all other times. Nearly all smoky chimneys arise from the fact that they are built in an outside wall which is too thin. The room should, if possible, be warmed by a gas fire, as in this way only can a uniformity of temperature be absolutely maintained, and for very young and very old people nocturnal variations of temperature are extremely dangerous. But a gas fire is not an old coal grate filled with asbestos. A gas fire must be constructed for the use of gas on entirely special principles. The sashes of the windows should fit well, and in every instance be provided with plate glass, for the reason that nothing assists the variation of nocturnal temperature like the employment of common sheet glass of the jerry builder. In going over the magnificent hospital built lately by the Birmingham Guardians for the old and sick, I had only one adverse criticism to make, that the windows, properly placed on both sides of the large wards, had not been provided with plate glass. The difference in price in the two kinds of glass will be far more than paid for in the difference in the coal bills incurred within the first two years to keep the wards sufficiently warm, for plate glass is a most efficient non-conductor of heat, and

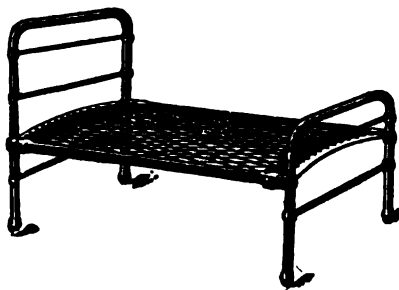
this sheet glass is not nearly so efficient.

In all bedrooms the heads of the beds (I assume now that in every case the beds are single, and when there are two that they are placed alongside each other) should have their heads close to an inside wall. If this cannot be arranged, then the wall and the ceiling, for a space corresponding to the bedstead, should be covered with a thick serge, loosely attached to the wall, to prevent the formation of cataracts of air chilled by the cold wall which will otherwise fall on the sleeper. The worst of colds are caught in this simple way in the small hours of the morning, and many a fatal senile or infantile bronchitis might be prevented by this simple expedient. For the same reason, the bed must not be placed between a badly-fitting window and the flue or the doorway. For purposes of ventilation, by far the best plan is the familiar one of making a small space between the middle-bars of the window, by raising the lower sash about two inches against a fixed inner sill plate. In this way a gentle stream of fresh air is diffused over the ceiling, displacing the foul air, and is diffused through the room at a proper temperature.

For the perfect hygiene of the bedroom there are, of course, very many points of importance into which I cannot enter, as that the walls should be double, with at least two and a half inches of something between them, even if that something be only air; that the outer layer of bricks should be vitreous (pressed Philadelphia or Ruabon); that the doors and windows should fit accurately, and, *most of all*, that the jerry builder should be avoided like poison.

We come now to the important matter of the bedstead, and the only people who require special consideration are those over six feet high, for whom extra length must be provided, otherwise no bedstead need be more, and all ought to be six

feet three inches in length, and no bedstead whatever, if constructed on the principles I intend to lay down, need be more than three feet wide—save for a few unfortunate people who are on exhibition. A uniform size of bedstead, interchangeable, would be a distinct comfort in change of houses. The material must, of course, be some metal, of which the best is steel and the worst is brass. Steel or iron, with the beautiful black enamel now used by Messrs. Whitfield, tastefully set off with a clean Marcella counterpane, makes the smartest and prettiest bedstead in any room, be it in cottage or palace, and it gives the least trouble; but, of course, tastes differ in the matter of material. Both head and foot rails ought to be finished in a strong, flat arch, an essential feature for the strength and smartness of the bedstead. For strength and steadiness, the head-rail must have four or five vertical bars fully secured into its arch and transom, so that the pillows are not pushed out by



The Lawson Tait Bedstead.

restless sleepers, whilst the arch of the foot-rail, not more than six to eight inches high, should have one horizontal bar to prevent any slipping of the mattress. The head-rail and upper legs are framed firmly all in one piece in my ideal bedstead, and so with the foot-rail and lower legs, whilst the frame of the bedstead is a solid parallelogram and a permanent frame for the "Dominion wire mattress"—by far the greatest improvement in modern bedstead making. The adjoining figure will show that this

beautiful and unique contrivance is a linkage of steel wire in short pieces, bent and hooked so that every two pieces enclose an elongated parallelogram, save at the margin, where they are stayed. If such arrangement were carried over space indefinitely it would mean that any pressure at any point would radiate equally in all directions. But as the frame of the mattress has a length of twice its breadth, the diminished longitudinal strain is supplemented by a supply of strong spiral steel springs, which serve the additional purpose of giving a point at which detachment of the springs from their frames may be begun, should it ever become necessary to remove them; or, if detached, the process of reattachment ends there. But there never ought to arise any necessity for detaching the springs or wire meshes, for the material supplied by Messrs. Whitfield is so good and the balance of tension is so perfectly contrived that it never varies. I am far beyond the average weight of male mankind, and I have used the same "Lawson Tait Bedstead" for now nearly seventeen years, and the tension of its spring has never varied in the slightest degree. The spring mesh is tightly secured all round the inside of the firm metal frame, made in one piece, so that the whole bedstead, weighing seventy pounds, and fixed together by bevel key joints or dovetails, comes into three pieces by a few smart strokes from below upwards, delivered on the dovetails on each corner, and for removals these three pieces pack on one another flat, and require only to be tied together by a piece of cord. Compare this with the awful work of removing an old-fashioned four-poster!

Every other spring mattress I have tried has some fatal defect. Either it stretches, and, being secured only at the top and bottom, requires a roller with ratchet wheel and cog for periodical winding up, if not secured at the edges; at every movement the unhappy occu-

pant is fully roused by the harsh grating of the wires against the edges of the frame.

As to the so-called spring mattresses which are formed of a large case filled with the "dice-Lox" spring or similar contrivance, I can only say they are beyond condemnation as uncleanly, inefficient, liable to breakage, and most uncomfortable, the springs rising rapidly and with force as weight is moved from over them. The individual springs can never be strong enough, and they are not arranged and cannot be made so as to act collectively. The uniform and co-extensive elasticity of the "Dominion Mattress" makes its yielding effective for all pressures, and yet it is felt at no particular point.

Another of the faults of the old four-posters was that they were far too high, requiring, as we see, in Hablot K. Browne's illustrations of "Pickwick," wooden step-ladders by which to mount into the "apartment." This fault is continued, to the great discomfort of short people and those who are old, feeble and ill. Measuring the bedsteads of a number of first-class hotels, I find that to the upper edge of the mattress, thirty inches and over is the usual height—far too much for any save people much above the average stature. Twenty-four inches to the upper edge of the mattress is far more comfortable for everybody, and the most comfortable bed, in my opinion, in the matter of height, is one on which the occupant can sit with the knee bent at very little more than right angles. For men of average height (five feet eight inches), this will be found to be about seventeen inches, or just the height of an ordinary chair, and this should include mattress and bedding. The legs of such a bedstead would not be much more than a foot long, and the great advantage of this height, with a width of thirty-six inches, will be found in cases of illness in heavy people who require much mov-

ing; and this is the greatest test to which a bedstead can be put, for the attending nurses of the present day average only five feet three or four inches.

It was this matter of the bedstead during illness, especially in surgical ailments, which first forced the question of the bedstead and its proper construction upon my notice. In cases of illness, the nurses are fearfully handicapped by an old-fashioned high double bedstead. The number of serious illnesses acquired by young women, and caused by the strain of lifting heavy and helpless invalids, has been very large in my experience. Therefore, I say, have all your bedsteads single, narrow, low, perfectly rigid, so constructed that the mattresses will not sag, and have a stout steel screw eyelet fixed in the ceiling over the site of every bedstead into which a cord may be fixed when wanted. This question of the sagging of a mattress is of the greatest importance, as a thoroughly depressed bed frame is a trouble even to those who are well; whilst in illness it means inevitably that, however well placed the patient may be, he will shortly work round so as to be on his back—always a helpless position, and one which often contributes greatly to the discomfort of a patient and sometimes even to his death. I have completely cured sagging

by throwing the top and bottom rails of the frame carrying the wire mattress into a widely opened arch, so that, when unoccupied, the whole wire mattress is slightly arched upward from side to side, and when occupied by an average weight the wire mesh is exactly flat. Turning from side to side in such a bed is a matter of ease for even the feeblest, and the inevitable turning on the back is entirely prevented. The ring in the ceiling, which is no eyesore even in the private bedroom, assists most materially in the movement of those who are in acute illness, and who as chronic invalids, without it, could hardly move at all, and would require every movement to be made for them by nurses. We never know when a bedstead may have to bear a bed of illness; therefore, the ring should have a very common presence in all our bedroom ceilings.

Messrs. Whitfield have brought the "Lawson Tait Bedstead" to what I think is final perfection by the india rubber footpad. It prevents noise and jarring when the bed has to be removed, and it is an enormous advantage over the old castor, which was noisy, frequently came off, and then was a source of much trouble. Then the castor, whether off or on, was a potent factor for the marking and disfiguring of a well-faced floor.



OINTMENTS AND PASTES

BY ERNEST WENDE, M. D.,

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THERE are many factors to be considered in properly preparing an ointment or paste, as well as many indications to be accurately observed in their application, so as not to hamper the possibilities in combating the numerous pathological processes. During the last decade, the end and aim of all preliminary study of skin diseases—the treatment pursued—has been greatly modified and a greater unanimity of effort in the choice of bases and ingredients has been instituted. France no longer resorts exclusively to bitters and sulphur, England no longer to purgatives and various forms of mercury tortured by ingenuity, and even America has lost faith in sarsaparilla, her once approved and universal specific.

The words of Dante, written over the gateway of hell: "Leave hope behind, all ye who enter here," were first erased from the propylon of the dermatological clinic at Vienna. It was notably Hebra who objected to the orthodox mode, and found that the skin, like other organs, may be idiopathically diseased. Thus a careful selection of local remedies is generally recognized to promote therapeutic success in the treatment of cutaneous affections. Experience has shown that such a choice is of greater significance than a well-directed constitutional administration of drugs.

Ointments, which are fatty mixtures of medicinal agents, constitute the usual and by far the most useful means for topical application.

There is found chiefly entering into the composition of their bases some unctuous substance, as lard beef or

mutton suet, a fixed oil, with more or less wax, or some ingredient like glycerin, vaselin or paraffin, having a similar consistence, and, lastly, lanolin, a product prepared from sheeps' wool by a process of centrifugation.

The following properties are essential for a good ointment basis:

I. Proper Consistency.—It must be soft, smooth and pliable, readily admitting of a uniform application. ○

II. Homogeneity.—It must be homogeneous, perfectly free from grittiness or irritating bodies, hard and crystalline.

III. Durability.—It must *not* show a tendency to change its physical and chemical peculiarities on exposure or long keeping.

IV. Miscibility.—It must be capable of easily receiving the medicating ingredients to be combined or incorporated, in order to facilitate their absorption and action.

V. Power of imbibition.—It must be capable of absorbing liquids, especially water, the importance of which can be best realised when a salt requires solution before being incorporated, as the iodide of potassium, and the like.

VI. Limitation of temperature.—It must have a melting point somewhat higher than the temperature of the body. It may soften and become pliable, but must not liquefy.

VII. Inability to produce irritation.—It must be perfectly bland and neutral in reaction.

Adeps or lard is the purified fat taken from the abdominal cavity of the hog, its specific gravity being about 0.935, its melting point 95° F., and it is readily

soluble in ether, benzine, and the disulphide of carbon. We will find that lard, after long preservation, on exposure to the light and air, especially a damp atmosphere, is apt to become rancid. It absorbs oxygen freely, and is readily subjected to decomposition, forming glycerin and volatile acids. Besides, when under the influence of water in compounding ointments, rancidity is easily acquired. The acquisition of an acid reaction, no matter how slight, often increases the irritation of the diseased parts, which complicates the reparative process and retards recovery. Again, the affinity of lard for water is but trifling, and it assists but sparingly in the absorption of remedies by the skin. In fact, it is only fit for pharmaceutical purposes when fresh.

Vaselin or petroleum fats are substances prepared from the waste products of petroleum distillation, having a melting point which varies from 104° to 125° F. They are insoluble in water, sparingly so in alcohol, and quite soluble in ether, chloroform, disulphide of carbon, oil of turpentine, benzine, benzol, and in fixed and volatile oils. Vaselin and its allied class have the great advantage of being durable and not prone to turn rancid, while the disadvantages are their incompatibility with water, their inferior penetrating powers, and their capability, in a few instances, where the skin is delicate and sensitive, of producing irritation.

Suet, spermaceti, wax, cacao butter and paraffin are too hard on the one hand, while glycerin and the fixed oils are too soft on the other, in themselves to form a good ointment basis. They are simply and occasionally used as ingredients, the former to impart firmness and the latter pliability.

Lanolin or wool-fat being a cholesterin fat, a true product of keratinous tissues, it is but natural to expect it to possess those qualities absolutely necessary for

an excellent ointment basis. As a derivative from sheeps' wool, it was brought to notice by Prof. Liebrich, of the University of Berlin. It possesses a specific gravity of about 0.935, while its melting point fluctuates between 100.4° and 104° F. It is soluble in ether, benzol, benzine, chloroform and disulphide of carbon, slightly in strong alcohol, and insoluble in water.

It is unoxidizable, non-irritant and neutral in reaction. It is readily absorbed and retained by the skin, increasing the therapeutic action of the drugs incorporated. It will readily imbibe more than its own weight of an aqueous solution without losing its pliability or salve-like form. It adheres better to a moist surface than any other fat or oil. It facilitates union with glycerin and is easily miscible with all other fats and oils. It is germ-tight, irreducible and hermetically sealed to micro-organisms. Moreover, its shortcomings are few and not grave, being merely charged of having a consistency slightly sticky and a faint, sheep-like odor. It occurs in the shops in two forms, one containing about twenty-five per cent. of water, the other free from it. The anhydrous lanolin, in my judgment, makes the much better preparation, for the addition of water might irritate in some instances, and whenever it becomes necessary to incorporate water or an aqueous solution it can be readily added at any time. To overcome the slight stickiness, I generally combine with it ten to twenty per cent. of vaselin.

Ointments may be considered as:

I. Sedative, when they counteract an inflammatory process, cool the burning and soothe the irritation. They act mostly in protecting the diseased surface from the stimulating action of the air and moisture, and comprise the simple ointments, cold cream, lanolin cream, and the like.

II. Astringent, when they counteract a

lax condition of the skin. They are also soothing in their action. They act in modifying inflammation and secretion by constricting the caliber of the capillaries and the ducts of glands. They include such substances as zinc, bismuth, lead, tannin and the like.

III. Stimulating, when they counteract a morbid process of the skin by setting up a new action, hastening nutritive changes, which re-establish the normal performance of its functions. They contain such ingredients as sulphur, tar, mercury, naphthol, resorcin and the like.

IV. Antiseptic, when they counteract infection. They act by preventing putrefaction and fermentation, inasmuch as they destroy micro-organisms, restricting their growth and multiplication. They comprehend such remedies as iodoform, iodol, aristol, corrosive sublimate, carbolic acid and the like.

V. Antiparasitic, when they counteract the life, growth and development of the various low forms of animal and vegetable life infesting the human epidermis. They act by producing direct impressions, which are poisonous to the parasite. Among them may be found styrax, beta naphthol, mercury, balsam Peru, sulphur and the like.

VI. Antipruritic, when they counteract itching. They act in all probability by paralyzing the peripheral nerves, inducing, locally, an anesthesia which relieves the over-excitation of the sensitive nerves, or by modifying an abnormal secretion or excretion. They include such remedies as carbolic acid, terebene, menthol, camphor, cocaine and the like.

Ointments are curative agents, their functions being to protect the diseased skin from all external irritants and impurities; from atmospheric influences and vicissitudes; to aid in the absorption of medicaments; to relieve by cooling and soothing the burning sensation of inflammation; to mitigate pain; to allay itching; to alleviate an unusual dryness

and harshness; to astringe capillaries in serious effusions; to loosen and remove an accumulated debris of crusts; to resolve effusions, infiltrations, and new formations; to render the parts aseptic and impassable to germs; and, furthermore, to regain and preserve the integrity of the integument by stimulating nutrition.

PASTES.

Pastes, during the past few years, have been largely used in the treatment of skin affections, especially for the various types of eczema. They were first introduced to the notice of the profession by Lassar and Unna, of Germany. They are applications which resemble ointments, having a firmer consistence, however, due to a powder incorporated in an unusual proportion. The substances used may be either of a mineral or vegetable origin. The minerals generally employed are kaolin, talc, bolus alba, chalk, zinc oxide, calcium and magnesium carbonate, while those taken from the vegetable world are usually starch and lycopodium.

The advantages over ointments are two-fold. They not only defend the eruption from external irritation, exclude the air, preventing dessication and oxidation, but the excretions and secretions of the diseased parts, through their influence, are also absorbed. Furthermore, they aid adhesion, producing a fixation of medicaments. These preparations employed for local application in the treatment of skin diseases are either of a hard or soft consistence, the former containing more or less gelatin.

One of the best known and useful belonging to this class is the so-called Unna's gelatin paste, made by the combination of

℞	Zinci oxide	
	Gelatin	āā 7.50
	Glycerin	15.00
	Aquæ distil	20.00

To form a basis in which may be incor-

porated iodoform, salicylic acid, ichthyol, chrysarobin, thiol or other antiseptics to meet the indications of the case. It is beneficial in overcoming the evils engendered in subacute and chronic eczema and like inflammatory processes.

However, it is counter indicated in very hot climates, owing to its limitation, preventing solidification, nor is its application adapted to hairy parts, as its removal would be then painful. As a practical suggestion in its use before it has become hardened or set, it would be advantageous to gently pat it with absorbent cotton or cover it with a thin layer of cheese cloth in order to prevent the undergarments from adhering to it.

Of the soft pastes, the one that has enjoyed the best reputation is that first prescribed by Oscar Lassar, and named after him.

It consists of

℞ Acidi salicylici	2.00
Zinci oxidi	
Amyli	
Vaselin	
Lanolini anhydr. āā	20.00
Misce. Leniter lerenda fiat pasta.	

This exceedingly useful therapeutical preparation is of extensive applicability, notably in the different forms of eczema. It is applied like an ointment, spread on the skin, leaving a coating on it and absorbing secretion instead of sealing it up.

Other remedies, as tar, beta- and hydro-naphthol, ichthyol, etc., may be profitably combined. A gum paste is a modification of the soft variety, in that it contains gum arabic. This mixture should be carefully prepared without the aid of heat, and consists usually of some particular powder in the proportion of two parts to one of mucilage of acacia and one of glycerin.

Hyde states that "The following details are to be noted respecting the availability of these pastes for different ingredients: Lead is best used as an acetate, either in a simple paste or with dextrin, the carbonate, oleate, and iodide combining well with both. Zinc oxid combines well with kaolin, lead, starch, dextrin and gum. Sulphur combines well with the three last named, poorly with kaolin, and not at all with lead. Ichthyol suits well with all save the gum pastes. Naphthol, calomel, corrosive sublimate, red and white precipitate, carbolic acid, chloral hydrate, camphor and salicylic acid can be incorporated with all, the last named in smaller proportion with gum paste. Tar is better united with starch, dextrin and gum than with others. Iodine and iodoform naturally do not suit well with the starch and dextrin pastes. Chrysarobin and pyrogallol are united with kaolin and gum pastes and should not be added to them. Fatty and soapy substances, if commingled in large amounts with these pastes, injure their special properties."

Their mode of application is a matter for attention and of importance. They should be gently rubbed upon the diseased part with the fingers or an appropriate spatula, the former being used when the skin is tender. They should be well introduced in all cracks and crevices and uniformly distributed in a moderately thick layer over the whole of the affected epidermis in order that the physiological and therapeutical properties possessed by the paste may be justly fulfilled, namely:

First.—The fixation of the medicaments incorporated.

Second.—The absorption of secretion and excretion of the lesion.

Third.—The protection of the diseased integument.

THE EFFECTS OF MODERN SMALL-ARM PROJECTILES,

As Shown by the Wounded of the Fifth Army Corps, During the Campaign
Resulting in the Capture of Santiago de Cuba.¹

BY CHAS. B. NANCREDE, A.M., M.D., LL.D., Ann Arbor, Mich.,
*Professor of Surgery in the University of Michigan; Late Major and Chief Surgeon,
U. S. Volunteers.*

TO bring my remarks within the limits assigned to me in this discussion, I shall be compelled to attempt little more than the statement of a number of propositions, fortified, perhaps, by a few illustrations; but anything like statistics or elaborate argumentation will not be employed to sustain my contentions. I desire to call attention to the fact that what I shall say is founded on a fairly large personal experience of gunshot wounds occurring in civil practice, including one in my own person, and the observation and treatment of hundreds of ball injuries received in actual warfare. While I might cite many cases treated by myself or observed in the practice of my colleagues in support of my views, I must ask you to understand that whenever I venture upon a statement, it is the result of personal experience, acquired during the treatment of hundreds of cases, the direction of operations, or of treatment of many others, and the study of the outcome of the therapeutic efforts of colleagues in the care of hundreds more of wounded men, many of whom subsequently came under my care. One point of vital importance must not be lost sight of—that owing to lack of knowledge, carelessness or ill-fortune, many cases which remained aseptic for longer or shorter periods became subsequently infected; this fact will unquestionably ex-

plain any apparent discrepancies between the statements I shall make and those published by surgeons who never heard a bullet whistle, or ever dressed a ball-wound recently inflicted by a modern small-bore projectile.

The reports show that about 1,400 wounds were cared for at the hospital with which I was connected, for nearly all of the injured in the Fifth Corps who survived for twenty-four hours, sooner or later passed through our hands, so that fresh wounds and those of a day to a week or more were observed. When, owing to the transfer of patients, my personal knowledge failed me as to the ultimate result, inquiry among other army surgeons has elicited the necessary information. My present attitude with regard to many questions should have special weight accorded to it, because it is decidedly opposed to that which I formerly believed I was authorized to teach from what past experience had taught me, or experiments, conservatively interpreted, seemed to warrant me in relying upon.

You will pardon me for briefly stating some facts of ballistics, because, although "the laws of ballistics are a difficult and thankless study, a knowledge of them is of inestimable value to the army surgeon," as Delorme says. Failing to apply some well-known laws of physics has led to numerous errors in theory, upon

¹ Read before the Am. Surgical Association, Chicago, May 31, 1899.

which have been founded equally incorrect practice. The wonderful initial velocity attained by modern small-bore projectiles, which, when arrested, develops such enormous "energy," has completely obscured the fact of the very remarkable energy of the older weapons. Thus, the Mauser develops 89,543 foot pounds muzzle energy, while the Springfield shows 60,333, only one-third less.

Surprise is often expressed at the trivial, almost incised, character of most flesh-wounds. This should have been anticipated, because, with such immense velocity, if little resistance is experienced, the missile will retain nearly all its "energy," imparting practically none to the tissues. Hence, the devitalization of the walls of the ball-track is reduced to a minimum. Although doubling the velocity of a projectile *quadruples* its energy, as compared with that of another of similar weight moving with half the velocity, it seems too often forgotten that doubling the mass also *doubles* the "energy," so that when the velocity with which the lighter ball moves approximates that of the heavier ball, the "energy" of the heavier missile is often actually greater than that of the lighter, more rapidly moving projectile. Too many surgical writers have apparently ignored these facts, and then, seeing the tremendous effects produced by modern bullets impinging at short ranges, they have overlooked the retarding effects of the atmosphere upon velocity. Knowing the miles that the modern weapon will send its projectile when sufficient elevation is given, they have rashly concluded that in the mid-ranges the velocity vastly exceeds that attained by the older bullets; hence, much greater disruption of tissues and rarity of lodgment was expected than was either observed or should have been anticipated if a few of the laws of physics had been considered. Doubtless, ground for these erroneous views was given by the results

obtained in dead bodies, in which physical changes in consistence and loss of certain physical qualities of the tissues explain many of the differences between the results obtained by experiment and those observed in actual warfare. The effects of air resistance (hence diminished velocity), with differing rates of actual velocity, in part serves to explain the differences observed with reduced charges for calculated (short) distances, as compared with those following balls driven by service charges at actual distances.

Finally, the convenient phrase, the "energy of a ball means its power to do work which is equivalent to penetration," must not be allowed to mislead. Perforation or deep penetration is not the only means by which the "energy" of a projectile must be measured; its disruptive, tissue-destroying powers are of equal importance. For perforation or deep penetration, retention of form is all-important, as is shown by firing first a German-silver jacketed ball into oak across the grain, and then another whose mantle is formed of nickeled steel, the powder charge being the same. Three feet from the muzzle, the former will penetrate only 5.3 inches because the ball *deforms*, but its track shows wide destruction of the wood, while the latter ball will only stop after penetrating 19.5 inches, being *undeformed*, the track being almost the same size as that of the projectile. In the human body, such deformity could only have resulted from an amount of resistance such as would have caused detachment of liquid and solid particles, which would have become secondary missiles, while the remaining "energy" would radiate, as motion, in all directions, from the track, through the stable portions of the tissues, producing their disruption, *i. e.*, the so-called "explosive effects." I need proceed no further in my attempt to recall other facts of ballistics, since sufficient for my pres-

ent purposes has been, or shortly will be, detailed.

A moment's reflection upon the curve described by the trajectory of a modern ball, the much greater length of one diameter, and that many of the wounds are received at from 800 to 1,000 yards, must convince you that deflection is quite possible, because of the decided angle at which the ball impinges upon the elastic, tense skin, muscles and fascia, or dense bone, the last presenting an often inclined at a sharp angle to the line of flight of the missile. If a bullet can be turned sideways by striking the soft parts at an angle, it is a mechanical certainty that further deflection by bone will prove a comparatively easy matter. I have



Fig. 1.
a. Undeformed ball passing sideways through both thighs during life.
b. Deformed core without jacket, removed during life.

seen a number of wounds made by projectiles which entered sideways, *i. e.*, with the longest axis at a right angle to the line of their flight, producing a "key-hole" opening.

Impressed with the enormous "initial velocity" of the modern small-bore projectile, sufficient allowance has not been made for the comparatively small "remaining velocity" at 800 to 1,000 or 1,200 yards, at which distances so many wounds were received. Calculations show that these velocities closely approximate those attained by the older rifles at the shorter ranges, at which de-

flection was known sometimes to occur. Thus, at 1,000 yards a Mauser ball, with an initial velocity of 2,285 foot seconds, possesses a "remaining velocity" of under 1,000 f. sec. (920 f. sec.), with an "energy" of 14,515 foot pounds, the velocity being about that of a Springfield missile at 300 yards, but whose "energy" at that distance is 34,286 foot pounds. At 1,000 yards, although the speed of a Springfield ball is only 680 f. sec., the "energy" is 16,507 f. pounds, while at the same distance the Mauser has a remaining velocity of 920 f. sec., but its "energy" is only 14,515 f. pounds—actually less than that of the Springfield at the same distance. The Mauser retains a velocity of 730 f. sec. at 1,500 yards, giving an "energy" of 9,139 f. pounds, while the Springfield projectile, with a "remaining velocity" of but 520 f. sec., develops an "energy" of 9,653 f. pounds; these results are due to the more than doubled mass of the bullet and the approximation in the velocity of the two missiles.¹

No contention is made that deflection is common or to be expected at short ranges, only that at the distances at which many wounds are received, when the result of the impact of modern military rifle-balls, this is not only possible, but does occur, and more commonly than is taught. Still further, upon purely scientific principles, readily capable of demonstration, this result could have been foreseen. At short ranges, with the enormous "energy" developed by modern small-arm projectiles, the reverse obtains, but, as proved by the calculation just submitted for your consideration, the loss of "energy" at 1,000 to 1,500 yards is such as to determine occasional deflection when assisted by favoring circumstances. Although not

¹ These calculations are made by Bashford's tables and formulæ, and, while not absolutely accurate, the same error being common to all the results, they are sufficiently correct for all practical purposes; indeed, no other method is available, the British War Office relying upon the methods I have employed.

common, I certainly saw a number of wounds where further deflection occurred after the entrance of the ball, but the weapon from which the missile was fired was certainly far beyond its point-blank range, claimed to be about 600 yards, although I have not yet secured exact data as to this "point-blank" range.

Despite all theory and experiment, a large per cent. of the small-bore projectiles, which, in no proper sense of the term, were "spent," did lodge, the Spanish surgeons noting the same of our own Krag-Jorgensen balls. Some surgeons believed that as high as twenty-five per cent. lodged, but this is an exaggerated estimate, the actual number being probably between ten and fifteen per cent. The explanation of this surprising fact was variously sought in the supposed deteriorating effects of the climate on the nitro-powders, but Capt. Chas. A. Worden, U. S. A., found that some of the captured ammunition would drive a Mauser ball nine inches farther into pine wood than our own Krag balls would penetrate when propelled by fresh powder. Loss of velocity was assumed to have been produced by contact with innumerable twigs and blades of grass during the flight of the bullet, and possibly this was a factor. Still, if you take my calculations as to the retardation of velocity effected by atmospheric resistance, even to a projectile moving with an initial rate of over 1,500 miles an hour, it will be seen that the "energy," i. e., the power to do work, which, in the case of a bullet, means penetration of tissue, must soon be reduced to a point often incompatible with perforation of the part, if bone be met with, because one-half of the remaining velocity, squared, multiplied by the mass of the ball, equals the "energy," and this has been shown to be only about one-sixth of its initial "energy" at 1,000 yards, and but little more than one-ninth at 1,500 yards.

The majority of the erroneous state-

ments made concerning modern small-bore projectiles have resulted from either ignorance or neglect of some of the facts I have mentioned, combined with the assumption that the dead tissues of a cadaver will react to the application of physical forces, as living tissues will. This is a palpable mistake, because their physical conditions are altered from liquids to solids, as the liquid fat of the medulla and cellular tissue, which becomes changed into a soft-solid mass by loss of the body heat.

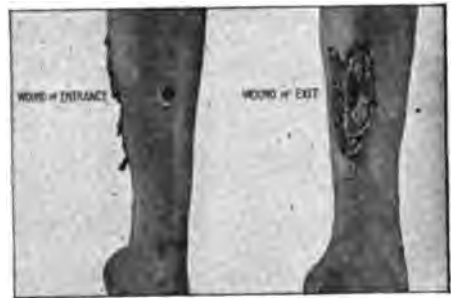


Fig. 2.
Experimental (Explosive effects) at 220 yards.

A due consideration of the foregoing data will also explain why "explosive" effects were so slightly marked, none of the "appalling destruction" (Fig. 2) promised us being noticed, because, at the ranges most of the wounds were received at, the "remaining velocity" was insufficient to impart sufficient motion to the detached particles of fluids and solids to convert them into "secondary missiles." I need hardly prove to you that neither the "compressed air" nor "hydraulic theories" explain the "explosive effects" of bullets. Practically identical results are secured when a bullet is fired through a leaden vessel filled with water, entirely open at the top, and one completely closed. Moreover, the point of exit of the ball is exactly *opposite* that of entrance, which would be impossible if the widespread rending of the vessel were caused by hydraulic pressure. The instantaneous arrest or sudden retardation of the extreme velocity results in the im-

parting of the enormous "energy" possessed by the ball to any detached liquid, soft or hard particles of the tissues, these becoming "secondary missiles," while the force radiates in all directions from the ball-track through the non-detached portions of the tissues. It will thus be seen that if two balls, possessing the same "energy," strike the same bone, one passing through the cancellous articular end, and the other the dense shaft, the former should do little harm outside its own track, while the other should show "explosive effects" in a degree proportioned to the "energy" possessed by the ball and the resistance met with; and this is precisely what is seen in practice. Yet some surgeons talk as if all wounds inflicted by bullets possessing the same velocity are to be expected to show the same results, totally ignoring the question of "resistance."

Demosthen's dictum that "explosive effects" always resulted when the cranium is struck at any range up to 1,400 metres, is a mistake. Tangential, penetrating, and perforating wounds were all observed, and, so long as asepsis was maintained, did well. I was astonished at the small amount of damage, comparatively speaking, and am convinced that nearly every head wound inflicted at ordinary ranges which did not involve centers essential to life would have recovered if asepsis had been secured and maintained, as was done in some cases.

The term "conservatism," as applied to the treatment of head injuries, requires explanation. In some cases only antiseptic occlusion was employed; where lodgment occurred, this plan was adopted after loose fragments had been removed, but no search was made for the ball; when fracture had occurred without lodgment of the ball, bone fragments were removed or elevated, the wound irrigated and drainage afforded.

From my preceding statements it must be clear that flesh wounds were always

of a trivial nature, unless the ball became deformed by striking some extraneous object, or when stripping its mantle, as it sometimes did (Fig. 1, *b*). This immunity enjoyed by the flesh wounds caused by Mauser and Krag balls resulted, first, from the slight amount of contusion caused by the rapidly moving ball; second, the aseptic condition of the ball, and, third, the rarity of the carriage of fragments of clothing into the wound, as was not uncommonly done by the 43-caliber Remington, brass-mantled balls. If maintained aseptic, the majority of flesh wounds healed almost as if they had been incised wounds, not uncommonly cicatrising under the primary field dressing made with the first aid package.

Contusions, or slight wounds of the great vessels leading to so-called "traumatic aneurisms," or aseptic or septic sloughing of the vessels many days after the receipt of the wound, were far from uncommon. Thus, I saw one wounded subclavian where the patient survived over three weeks, to finally succumb to hemorrhage during an attempt to ligate the vessel, which was torn for a long distance. I also know of another dying on the table some weeks after being wounded, during an attempt to secure the same vessel. I tied the common femoral for wound and assisted a colleague in securing another, days after the receipt of the injury. I tied one radial for secondary hemorrhage and ordered the tying of an ulnar for ball injury several days after their division, and was compelled to amputate an arm after failing to secure a bleeding brachial in an apparently aseptic wound, two weeks after the man had been shot. Other cases might be added, but these will suffice to show that such injuries are possible.

Largely because all important vessels which were wounded did not give rise to immediate death from hemorrhage, conjoined with the less severe character of the head, thoracic and abdominal inju-

ries than was anticipated, the mortality on the field was much lower than was expected, about one-fifth of those struck perishing on the field. Some of the saving of life was doubtless due to the prompt aid given the wounded by the surgeons, who rendered aid under fire, as was shown by the recommendation of sixteen surgeons for brevet rank for "meritorious attention to the wounded under fire."

The first aid packages with modern antiseptic precautions were doubtless the chief causes of the small mortality among those wounded, whose injuries were not of themselves necessarily fatal on the field, or within a few hours after their receipt. Unfortunately, from ignorance, carelessness, or defiance of scientific facts as guides to treatment, a number of wounds became infected later, which would otherwise have continued to progress as favorably as they had been doing up to the time of their infection. Even in these cases, a resort to prompt and energetic antiseptics favorably modified the septic processes, and minimized the evils resulting from the infection. The evils of delay in the application of the contents of the first aid package was demonstrated to me in at least two instances by undressing a bullet wound swarming with maggots. Careful inquiry developed the fact that no dressing of any kind had been obtainable for many hours—in one instance nearly twelve hours. If flies could from without deposit their eggs in a wound, the ubiquitous pyogenic organisms already present in or upon the patient's skin immediately surrounding the traumatism can still more readily find lodgment therein, unless immediately inhibited by contact with an efficient germicide.

If I am not greatly mistaken, it was not until July 3d that we began to receive "tagged" patients, and it was about the same time that I succeeded in enforcing this regulation in the operating

tent at Siboney, in order to lessen the almost hopeless task of handling so many wounded, and to reduce the risk of infection from unnecessary dressings. Unless a patient was judiciously "tagged" when admitted to the hospital, a dressing was necessary to determine the character of the injury. This dressing often proved uncalled for, as demonstrated by the conditions found, and as some were slack as to their antiseptics—difficult at best to attain—a certain number of aseptic wounds became infected which would otherwise have remained uncontaminated.

The greatest advance in military surgery on the battlefield in recent times is

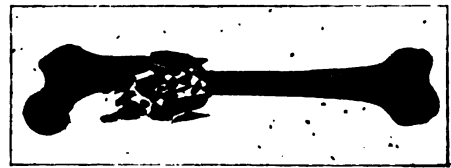


FIG. 3.
Injury by Steel Jacketed Ball at about 1,300 Yards.

the first aid packet, and the greatest boon conferred on the wounded soldier has been asepsis and antiseptics, because, in the majority of instances rendering his injuries so painless and their complications so slight, that even anesthetics no longer occupy the chief place as a blessing to the wounded, because comparatively rarely needed.

As has been already demonstrated, the "explosive effects" of modern balls at the distance at which most must strike in an actual engagement, will not produce such destruction of bone as often to demand amputation, if asepsis can be secured; hence, removal of limbs for extensive fracturing of the long bones was almost unknown. Indeed, I have seen perforation of a tibia without loss of continuity, notching of the condyloid ridge of the humerus with not even a fissure of the shaft, while other bones were merely guttered. Exploration with ex-

traction of splinters was sometimes done, but antiseptic occlusion was the rule, and was followed by the best results just so long as infection was avoided. When this occurred, the patient was somewhat worse off than if the free drainage secured by exploration with removal of fragments had been obtained. Joint wounds were likewise usually successfully handled by antiseptic occlusion, with such fixation as was available. According to the official report, "more than a score of gunshot wounds of the knee-joint were thus treated with the happiest results."

In a recent article I have seen an imputed reflection cast upon the work of some of the surgeons at Siboney, because of the lack of, or rather comparatively rare use of, fixation for the majority of wounds of the extremities. Indeed, it was plainly said that plaster of Paris had not been used as it should have been. We certainly neither had the materials nor time enough to attend to more than the most imperative duty, which was to render and maintain the wound aseptic and disinfect the septic ones. Later, attempts were made with the utterly inadequate materials at our disposal to immobilize the parts.

Certainly some of us knew quite as well as our critics what ought to be done, but we only did what we could, and did not attempt the impossible, as those who kept out of the way of bullets and hard work thought we should have done. The worst cases were splinted, the milder were not. To antisepsis, in its widest sense, was due the great difference in the secondary mortality among the wounded, which, without this safeguard, would have differed little, if at all, from that observed during the Civil War. Antiseptic occlusion also proved the best treatment for most of the thoracic, abdominal, and, as just said, articular injuries. The confidently prophesied violent hemorrhage from the small vessels of the

lung parenchyma did not occur in any cases seen by me. The amount of bleeding into the chest cavity never required primary intervention for its arrest, and, I am informed by others, rarely required operation later; even then, aspiration usually proving amply sufficient, because infection had been avoided.

All perforating ball wounds of the abdomen operated upon, I am informed, perished, while a number I saw recovered without intervention, antiseptic occlusion being relied upon. The Spanish surgeons reported similar results after undoubted intestinal perforations. I am convinced that it is rarely possible to secure reliable aseptic facilities on the



FIG. 4.

Wound of Entrance at about 660 Yards; Perforation of Cancellous Bone with but Little Fissuring (from Unpublished German Work).

part of patient, surgeon, and attendants, soon enough after a general engagement to obtain the advantages of an abdominal section before peritoneal infection has started in consequence of wounds of the hollow viscera. Wounds of the liver and kidneys did not seem to give rise to dangerous infection in the small number treated. If section cannot be done before peritoneal infection has become well established, both civil and military surgeons have long believed that poor as are the chances of recovery, they are lessened rather than increased by a section. This was the attitude I assumed twelve years ago when reading a paper on gunshot wounds of the abdomen before this body, and my experience in Cuba simply confirms me in my original opinion. An operation which adds nothing material to the patient's risks when performed

early, in a well-equipped civil hospital, by an expert in abdominal surgery, or after a skirmish even in a field hospital, where the services of an expert can often be secured, will too often determine the death of some patients who might have recovered—as they have in the past by the unaided efforts of nature—when a section is made in a hurry by inexpert, dirty hands. One thoracic wound, which several of us believed must have involved the heart, recovered. So far as I can ascertain no formal excisions of joints were done, although atypical resections were once or twice made for shoulder-joint injuries when the humerus had been badly shattered; at the time I questioned the propriety of these procedures, and I do not think I should have consented to have performed these operations myself, unless it was clear that the fragments of

the humeral head were so broken as to deprive them of proper nourishment. Explorations of the ankle and wrist-joints with the removal of bone-sand and fragments, followed by drainage, were done in a few instances, but when I last saw these cases I was not favorably impressed by their prospects. Do not misunderstand me. I am giving the results of actual observations, and I therefore believe that in all cases where distinct indications do not exist for meddling, the best *primary treatment* for modern ball wounds of joints is antiseptic occlusion, to be followed by antiseptic incision, exploration, removal of infected foreign bodies, fragments of bone, etc., and the maintenance of free drainage, *when the occasion requires*, not merely to meet a theoretical possibility which may never materialise.



THE CORRECTION OF NASAL DEFORMITIES BY SUBCUTANEOUS OPERATIONS.¹

BY JOHN O. ROE, M. D.,

Rochester, N. Y.

THE method of performing operations subcutaneously is by no means new, for it is a century since Delacroix and Anel demonstrated the advantages of evacuating cavities containing pus and blood by this method; and since Abernethy adopted the plan of opening abscesses and diseased joints, by valvular incisions, so as to exclude the air. The practical advantages of this method were more fully demonstrated in 1816, by Delpech, who performed the operation of tenotomy in a subcutaneous manner, in order to avoid the subsequent inflammation which attended the operation when performed by the old method of exposing the tendon before it is divided.

The object of performing operations subcutaneously, at that time, was chiefly for the purpose of excluding the air, for it was even then observed that, when air is excluded from a wound, no inflammation follows. But, with the recent adoption of antiseptic methods, it may be said that the only advantage which now remains, of performing operations subcutaneously, is the avoidance of wounding the skin on any of the exposed portions of the body. As the nose is the most prominent feature of the face, the facial expression depends to a great extent upon its appearance, and as deformities of the nose are especially unsightly, it is not only important that they should be corrected, but that the operation should be performed in a manner

that will leave as few traces as possible of the previous disfigurement.

Previous to the time that the writer demonstrated the methods by which nasal deformities could be corrected by subcutaneous operations, all attempts that had been made to correct such deformities, so far as he is aware, involved the laying open of the skin, in order to reach the deformed part, and usually resulted in exchanging a deformity for an unsightly blemish. The unsightly scars left behind, therefore, had the effect of discouraging such operations, and, unless the deformity was excessively hideous, the person generally preferred to bear the ill he then had, rather than to flee to others he knew not of.

The importance of correcting nasal deformities, as well as other deformities of an unsightly nature, is evident from the conscious effect of such deformities in influencing the habits and thoughts of the person. On account of this distinguishing mark many are deterred from participating in the enjoyments of social life, by the consciousness of the disadvantages under which they are continually laboring. So universally recognised are the disadvantages of a deformed and unsightly nose, that, even in ancient times, much attention was given to the shape and appearance of this important feature. It is said that, among the ancient Persians, no man, who had a crooked or deformed nose, was allowed to sit upon the throne; and children of the royal blood were ac-

¹ A portion of this paper was read before the Sixty-fifth Annual Meeting of the British Medical Association.

customed to have their noses moulded into perfect shape, by the eunuchs who had charge of the royal offspring.

CLASSIFICATION.

Nasal deformities are usually divided

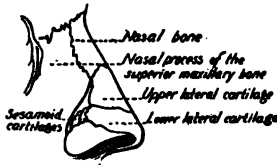


Fig. 1.

into two main classes: (1), Idiopathic or congenital, and (2), traumatic or acquired. Congenital deformities are frequently regarded as mere accentuations of certain racial types, but, as no special deformity is characteristic of any particular race, no class of deformities can be



Fig. 2.



Fig. 3.

said to be governed merely by racial influences. Traumatic or acquired deformities sustain but little or no relation to the natural conformation of the nose, so they may assume any form in which accident or disease happens to leave them.



Fig. 4.



Fig. 5.

But, from a surgical point of view, nasal deformities may more properly be divided into (1), the deformities which affect the bony portion of the nose, and (2), the deformities which affect the cartilaginous portion. This division can be

clearly understood by reference to Fig. 1, which illustrates the anatomical conformation of the different parts of the nose.

Deformities of the bony portion may be sub-divided into (a), vertical, that is, those which distort the dorsal profile, in which the dorsal line is too convex, or too con-



Fig. 6.



Fig. 7.

cave, as illustrated in Figs. 2 and 3; and (b), lateral, that is, those which, when viewed from the front, present unusual deviation from the normal contour, whereby the bony portion may be either spatulated, Fig. 4, or deflected, Fig. 5. Deformities of the cartilaginous portion



Fig. 8.



Fig. 9.

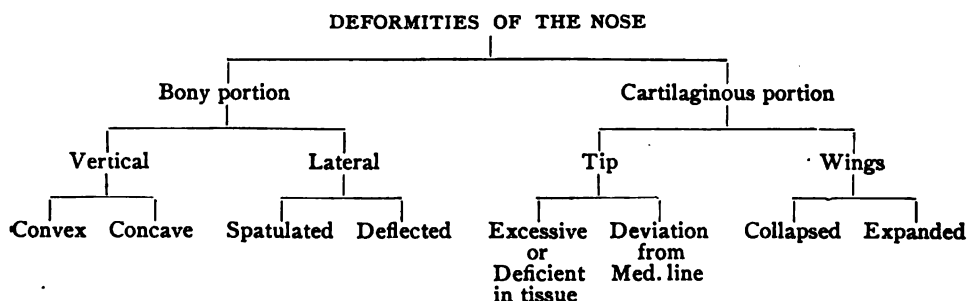
may be sub-divided into (a), those which affect the tip of the nose, whether excessive, Fig. 6, or defective, Fig. 7, in the amount of the tissue, or distorted from its normal direction, Fig. 8; and (b), those



Fig. 10.

which affect the wings of the nose, which may be either collapsed, Fig. 9, or abnormally expanded, Fig. 10.

For convenient reference, this classification can be more clearly shown in the following diagrammatic form:



This classification applies to ordinary nasal deformities only, and does not include those extraordinary deformities, which result from extensive destruction of the hard or soft parts by syphilis, lupus, or other diseases, or by accidents, in which metallic or other artificial supports or plastic operations, involving the integument, are required for their correction.

ETIOLOGY.

(1). *Convex Vertical Deformity of the Bony Portion of the Nose.*

This deformity consists of an undue projection of the anterior process of the nasal bones, so as to give the nose an angular appearance, and is sometimes termed, according to its different modifications of the nose, angular deformity of the nose, *nez a bec de corbin*, *rabe Nase*, *nez a promontaire*, *nez a chanfrein*, *nez a genou*. This deformity frequently causes the patient much annoyance, not only on account of its unsightly appearance, but also on account of the sensitiveness of the nose itself. In consequence of this sensitive condition, the nose is easily and frequently irritated by contact with different objects such as towels, handkerchiefs, etc. This sensitive condition is usually produced by one nasal bone overriding the other, the former presenting a sharp edge and in some cases nearly penetrating the skin.

This deformity may be congenital, or

it may be caused by a fracture of the nasal bones, when the fragments are thrown forward and allowed to remain in

that position; or it may be produced by any injury to the nasal bones that would excite a periostitis and cause an excessive amount of ossific deposit at this point.

(2). *Concave Vertical Deformity of the Bony Portion of the Nose.*

This deformity consists in a lowering or flattening of the bridge of the nose, sometimes termed saddle-back nose, and may either be idiopathic or traumatic. The idiopathic variety is due to lack of development of this portion of the nose, which may be associated with general lack of systemic development, or may be the result of local, organic conditions. During the development of the face, the central portion, comprising the nose, the ethmoid and sphenoid bones and parts adjacent, is not only late in developing, but is also the last portion of the face to undergo ossification. At birth the nose, at its base and central portion, is flat and nearly level with the face, but later, this depressed line is replaced by a more prominent one, as the nose becomes developed. From this it will readily be seen that anything, which interferes with the proper development of these parts, so as to cause them to remain in their infantile condition, while the end of the nose undergoes due development, will give the nose an unsightly shape, on account of the relative depression of the central portion.

The development of this portion of the nose may also be interfered with by local organic conditions. The most important of these is nasal obstruction. This may operate to produce imperfect development (1), by disturbance of the circulation in the part, caused by intranasal pressure resulting from hypertrophy of the tissues; (2), by the suction-force produced in the interior of the nasal chamber during each act of respiration and deglutition. This suction-force, exerted on the inner side of the yielding nasal tissues, tends to draw them inward, and to prevent their normal expansion and development. In some cases the concave vertical deformity may exist in appearance, but not in reality, for the reason that an abnormal development of the end of the nose might make a normal dorsum appear to be depressed and undeveloped.

Of the traumatic causes, those injuries to the bridge of the nose which are sufficient to cause fracture and dislocation of the nasal bones are the most frequent. These injuries are the result of falls, or blows, or fistic encounters, and the injury may vary from a simple dislocation, to a compound comminuted fracture, with extensive laceration of the parts, and complete destruction of the bony framework, resulting in complete flattening of this portion of the nose. Very often this depressed condition of the nose is the result of fractures and dislocations, that have not been properly treated, or it may be associated with depression of the cartilaginous part, the result of abscesses of the septum, or specific disease, causing destruction or dropping inward of the nasal bones.

(3). *Lateral Deformity of the Bony Portion of the Nose.*

This deformity may consist in a spatulated condition, *i. e.*, a flattening of the dorsum and bulging outward of the nasal bones, or in a deflection of this portion of the nose to one or the

other side. The spatulated deformity of the nasal bones consists in an undue bulging outward, and is usually associated with the concave vertical deformity already described. This bulging of the bones may be unilateral or bilateral, and gives to the dorsum a flattened appearance. When of idiopathic origin, it generally results from the same conditions of intranasal pressure, that give rise to the concave vertical deformity, from which in many cases I have observed it to result, or associated with an excessive hypertrophy of the middle turbinated bone. When of traumatic origin, it ordinarily results from blows on the nose, which, when coming from directly in front, may result in an outward dislocation of both of the nasal bones. Injuries to one nasal bone may cause an exostosis on that side alone, in which case the deformity will be unilateral.

Deflections of the bony portion of the nose may be due to an unequal growth of the two sides of the nose, or to injuries causing dislocations of the nasal bones, which, at the time of the injury, were not properly reduced. In the case of injuries, the distortion may result from a fracture, or inward dislocation and consequent depression of the nasal bone on one side, alone, or there also may be an outward discoloration and corresponding bulging of the bone on the opposite side of the nose, giving it the appearance of what is termed by blacksmiths an offset.

Deformities of the Cartilaginous Portions of the Nose.

These deformities may be confined to the tip of the nose, to the shield cartilages, or wings of the nose. When affecting the tip, there may be an excessive or deficient amount of tissue, causing undue prominence or depression of the end of the nose, or it may deviate from the median line.

(4). *Excessive Development of the Tip of the Nose.* The abnormal enlargement

of the tip or anterior portion of the end of the nose may be due to an excessive development of the tissue in this region, consisting of a redundant amount of cartilaginous tissue, or to an excessive amount of fatty tissue, or to both combined. This enlarged condition of the end of the nose is what is commonly known by the term snub, or pug nose, and is frequently associated with the concave vertical deformity of the bony portion of the nose.

In some cases, excessive development of the end of the nose may be confined to the upper portion of the tip, not broadening the end of the nose, but giving it an upward tilt, so that the dorsal line describes a curve. This form of nose is termed by the French "*le nez retroussé*," and is sometimes termed the "Celestial nose," which gently curves upward from the root to the tip. This condition may be purely idiopathic, a family peculiarity, but is more often associated with defective development of the bridge of the nose, and the result of the same local causes—namely, obstruction of the nasal passage and intranasal pressure. This condition, too, causes a chronic engorgement of the end of the nose, by interfering with the return circulation, and also by the sympathetic irritation reflected from the interior of the nose, which, by lessening the inhibitory resistance of the peripheral vessels, accounts for the fact of its being accentuated in "alcoholics."

For these reasons, chronic engorgement and undue redness of the end of the nose is almost invariably indicative of chronic irritation in the interior of the nose, and the influence of these chronic conditions, in affecting the growth and development of the parts, as already pointed out, emphasises the importance of giving attention to the condition of the nasal passages in children.

(5). *Deficient Development of the End of the Nose.* When the tissue of the lower portion of the nose is deficient in

amount, we have a corresponding flattening of the end, termed *nez camus*, *floche* nose and *frog* nose. In extreme cases the end of the nose is completely flattened upon the face.

Flattening of the end of the nose may be due either to lack of development of the cartilaginous portion of the septum and the columnar cartilage, or to destruction of this portion by diseased conditions. It may also result from deflection or wrinkling of the triangular cartilage, which may have been congenital, but is generally the result of injuries. In many cases which have come under my notice, the flattening of the end of the nose resulted from abscesses of the anterior portion of the nasal septum. In one case, the flattening of the end of the nose



Fig. 11.



Fig. 12.

resulted from an injury inflicted upon the nose by the obstetric forceps, at birth.

Destruction of the upper shield cartilages, located in the dorsum of the nose, and which fill the gap between the lower shield cartilages and the nasal bones, sometimes takes place, giving to this portion of the nose an indented appearance, as if the nose had been struck with a small round body, a poker, for instance, as shown in Fig. 11.

The destruction of these cartilages is usually the result of abscesses of the septum, (as illustrated by Fig. 12), following the hematoma, so often resulting

from external injuries, and is often due to failure to recognise the abscess, before the destruction of these tissues has taken place. In other cases the dislocation of these cartilages may result from an external injury, giving to the nose at this point the same indented appearance as shown in Fig. 32.

(6). *Deviation of the Cartilaginous Portion of the Nose.*

Deviation of the cartilaginous portion of the nose may be due to the unequal vertical growth of the alæ, forcing the nose over to one side, or there may be unequal development in the thickness of the two wings, distorting the nose, and giving it the appearance of being deflected. The most frequent distortion of the end of the nose results from injuries, inflicted on the nose by falls or blows during childhood, dislocating the triangular cartilage and causing deviation of the nasal septum, as shown in Fig. 13. The deformity at first may be so slight as to be almost unnoticeable, but later, as development takes place, the nose becomes increasingly distorted.

Frequently pressure against one side of the nose may slowly cause bending to the opposite side, as is sometimes the case with persons, who habitually use their handkerchiefs with one particular



Fig 13.

hand. This is especially the case when one nostril is obstructed, for, when blowing the nose, pressure on the open side is avoided, in order to give ample room for the expulsion of the discharge. In other cases, deflection of the cartilaginous portion may be associated with deflection of the osseous portion toward the

same side, so that the whole nose, though straight along the dorsal line, may be deviated to one side, often at a considerable angle from the medium line, (vide Fig. 39). This condition may result from injury or it may be an anatomical peculiarity.

DEFORMITY OF THE WINGS OF THE NOSE.

This deformity may consist of either a collapsed or expanded condition of these parts.

(7). *Collapse or Flattening of the Wings of the Nose.*

In the collapsed condition we have an undue flattening of the sides of the nose, interfering seriously with nasal respiration. This may be due to defective or distorted development of the alæ, or to paralysis of the dilatores naris muscles. In other cases cicatricial contraction of the interior of the nose, the result of specific ulceration, lupus, burns, etc., may cause contraction of the nasal opening and consequent distortion of the alæ on one or both sides. In other cases it may result from injuries causing dislocation or fracture of the alæ and the consequent distortion.

(8). *Expansion or Spreading of the Alae.*

This deformity is usually of congenital origin and consists of a marked distension or bulging outward of the lower shield cartilages, giving the end of the nose a very broad, prominent and inordinately flat appearance. On examination, however, it will be found that there is but little thickening of the tissues, the concavity of the interior being proportionate to the extreme bulging.

This bulging outward of the wings is oftentimes increased by the habit of inserting the finger into the nostrils to remove the crusts and dried discharges, caused by intranasal disease, with which it is very often associated. Marked expansion and distortion of the alæ not in-

frequently takes place from the pressure of intranasal growths.

TREATMENT.

As I have pointed out in previous articles on the Correction of Nasal Deformities,¹ the beauty of the nose depends almost entirely upon its symmetry, if the disproportionate relation between the size of the nose and the size of the face is not too great.

In correcting deformities of the nose, then, we have to study the symmetrical relations of the different portions of the nose to one another rather than its proportionate relations to the face. A nose which is originally proportionate to the face will, if deformed by loss or displacement of tissue of any portion, appear very unsightly, while the same nose, made one or two sizes smaller, will, if its different parts are made perfectly symmetrical, have a more or less handsome appearance. Therefore, in correcting deformities of the nose, it is symmetry and not size that is to be considered.

In this way it can readily be seen that the causes and conditions of the different deformities of the nose are so various that the operations required for the correction of these deformities must be equally varied, and no two cases will be found exactly alike, requiring the same operation.

There are, however, general underlying principles governing the different operations which must be observed in order to secure the desired result. Thus, in the convex vertical deformity of the bony portion of the nose and excessive development of the tissues of the tip of

the nose, the excessive or redundant tissue must be removed; whereas, in the concave vertical deformity of the bony portion of the nose or of defective development of the tip of the nose, the low portions must be filled in. Usually this can be done with tissue taken from the elevated portions, so as to make the nose symmetrical, or when this cannot be accomplished by the transfer of tissue from the elevated to the low portion, the latter can be filled in by tissue taken from some other portion of the nose, where it can be spared, and the elevated portions lowered so as to make the nose symmetrical.

In many forms of distortion of the nose, especially those resulting from injury, there is almost invariably a displacement rather than a destruction of tissues, which require only to be replaced to their original position. It is important, however, that all these operations be performed subcutaneously in order to avoid the wounding of the skin and the consequent disfigurement. In some instances fracture of the nasal bones and of the septum, too, may also be necessary in order to restore the parts to a normal condition.

To particularise further, I will briefly describe, as nearly as I can, the steps taken in the different operations for the correction of these deformities. As already observed, however, it is rare for one variety of deformity to exist alone, and to require but one form of operation for its correction.

Convex Vertical Deformity of the Bony Portion of the Nose. This deformity is the one most often found uncomplicated, and the operation for its correction is in the main performed as follows:

The skin is first raised from the projecting portion by incising the wall of the nose from the inside of the nostrils through to the under side of the skin, great care being exercised not to wound the skin. The opening is then enlarged sufficiently to admit the instrument re-

¹"The Deformity Termed Pug-Nose and Its Correction by a Simple Operation," Medical Record, N. Y., June 4, 1887. "The Correction of Angular Deformities of the Nose by a Subcutaneous Operation," Medical Record, N. Y., July 18, 1891. "The Correction of Deformities of the Nose Resulting from Abscess of the Nasal Septum," New York Medical Journal, March 25, 1893. "The Correction of Depressed and Saddleback Deformities of the Nose by Operations Performed Subcutaneously, Without the Aid of Metallic or Other Artificial Supports," Medical Record, N. Y., June 5, 1897.

quired, which may consist of bone scissors, rongier forceps, a slender saw or such other instruments as may be necessary according to the conditions present.

In removing the projecting portion, great care must be exercised not to remove too much of the redundant tissue, lest a depression be left in the top of the nose which may be more unsightly than the original deformity. This mistake more readily happens in those cases

pair of slender bone-clipping forceps, so as to give the nose the exact contour desired. After the parts were thoroughly cleansed and rendered aseptic, the skin was replaced, and a gentle compress was placed over the dorsum of the nose to hold the skin closely coapted against the bony framework.

The parts speedily healed, but, before the healing was complete, she accidentally dropped onto her nose a small hand mirror, with which she was inspecting it, while lying in bed. This injury brought about a highly inflamed condition and a slight abscess at the seat of



Fig. 14.



Fig. 15.

in which the upper portion of the nasal passage extends all the way up into this projecting portion. In these cases the nasal passage is very easily opened on removing the projecting angular portion.

By way of example, I will briefly cite from my records one or two typical cases, illustrating each of the different varieties of nasal deformities, together with illustrations of the appearance of the patient both before and after the operation:

Mrs. C., age thirty, was referred to me by her family physician on account of an unsightly angular convexity of the nasal bones, as shown in Fig. 14. The natural conformation of her nose was angular, but about five years before she met with a slight accident, striking her nose against a table, which rendered it exceedingly sensitive; so much so that she scarcely could use a towel or handkerchief without pain.

The operation for the removal of this deformity was performed according to the plan already described. After the skin was elevated from the deformed portion, the projecting portion of the nasal bone was sawed off, and the edges trimmed smoothly with a

injury. This was evacuated antiseptically and subcutaneously as soon as the pus was manifest, and antiphlogistic measures adopted. The disturbance, however, soon subsided, and the nose became perfectly well and symmetrical in every way, as shown in Fig. 15, much to the delight of the patient.

Miss D., Buffalo, N. Y., twenty-one, was referred to me on account of a convex vertical deformity of the bony portion of the nose, associated with a deflection of the whole nose to the right, both of the osseous and cartilaginous

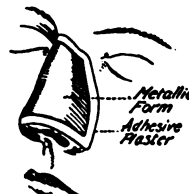


Fig. 16.

portions, together with a deviation of the septum to the same side.

This deformity of the nose followed an injury from falling on the ice when she was a child twelve years of age. Previous to this time her nose was perfectly straight, but since that time the deformity had been slowly but steadily increasing.

In correcting this deformity, the operation for removing the angular projection was performed in a manner very similar to the one just described. In this case, however, the septum also required straightening and the whole nose reset to the median line. This was done at the same time that the septum was

the writer for treating fractures of the nose, as shown in Fig. 16, was also applied to the exterior of the nose, so as to maintain symmetry throughout until healing had taken place. Figs. 17 and 18 illustrate the appearance of the patient both before and after the operation.



Fig. 17.



Fig. 18.

straightened, by refracturing both nasal bones so as to elevate one and depress the other, while bringing the nose over to the median line.

This was accomplished by a method, devised by myself, that obviated all danger of injuring the skin. It consisted in raising the skin from the nasal bones so as to apply the forceps to the bone from the under side of the skin. After the nasal bone and septum were

Concave Vertical Deformity of the Bony Portion of the Nose.

The operations for the correction of this deformity are entirely different from the last, and consist in filling in the depressed portions with flaps of tissue taken from and lowering the unduly prominent portion subcutaneously.



Fig. 19.



Fig. 20.

fractured, the nose was put in place, irrigated with a bichloride solution and made thoroughly aseptic, and a dressing applied to the interior of each nostril in the form of a splint wound with cotton, so as to maintain the bone in an elevated position, and at the same time to hold the fractured septum in a vertical position until healed. The form employed by

The methods by which this is done cannot be more clearly shown than by citing an illustrative case:

Mr. E——, aged nineteen, was referred to me for the correction of a marked saddle-back deformity of his nose, which had resulted from being struck with a base-ball club,

four years before. On examination, it was found that the nasal bones had been fractured, and the upper portion of the alæ of the nose and the shield cartilages were driven upward and inward, causing the sides of the nose to bulge somewhat outward, giving to the center of the nose a depressed and spatulated appearance. A large, perpendicular ridge, on the right side of the septum, at the osseocartilaginous junction, was also produced by the injury. This flattened condition of the center of the nose gave to its end the appearance of being unduly prominent, as seen by Fig. 19. None of the tissues, however, had been destroyed, but simply displaced from their normal position by the external force.

In this case the indications were to use the displaced tissues for filling in the depressed portion. The displaced tissues found on the sides of the nose were restored to the top, by

projected slightly above the line of the dorsum. This was lowered by removing sufficient tissue to bring it down on the line of the dorsum, making the nose perfectly symmetrical, as shown in Fig. 20. The nose was then held in place for a considerable period, by an external dressing, until the parts were thoroughly healed, and the nose showed no tendency to become distorted.

Spatulated Lateral Deformity of the Bony Portion of the Nose.

The correction of this deformity usually consists in sawing off portions of the bulging nasal bones, and placing these bone flaps, together with the attached soft tissues, in the median line in such a position as will fill in the depressed portion. This deformity is al-



Fig. 21.



Fig. 22.

raising the skin from the dorsum, through an incision made from the interior of the nostril, and turning the flaps, made of this displaced tissue, upward, to fill in the depression in the center of the nose. A portion of this displaced tissue consisted of bone, which was sawed loose with a sharp, slender saw. Then this was completed, a flap was made of the redundant cartilaginous tissue, constituting the ridge on the right side of the septum. In order to get this latter flap to the desired place on the dorsum, it was necessary to turn the flap twice to reach the spot. This was done by cutting the lower part loose and turning it up, allowing the upturned end to become attached sufficiently to supply it with nutriment, when the other end was cut away and again turned upward. When the farther end had again become firmly attached, the lower end was cut away and turned into place, which completed the filling of the top of the nose very nicely. The end of the nose still

most always associated with an enlarged condition of the end of the nose, which requires a corresponding amount of reduction in order to make the nose symmetrical, as illustrated by the following case:

Mr. B., aged thirty, was referred to me on account of a flat condition of the central portion of the nose, which caused him much annoyance, on account of its disfiguring appearance.

This condition was attributed to an abscess in the nose, which occurred when he was a lad, the cause of which, however, was unknown, but which was believed to be a case of the lack of development of this portion of the nose, as shown in Fig. 21.

On examination, the dorsum of the nose was found to be much flattened, and the nasal bones bulged outward. The end of the nose

was not hypertrophied, but the shield cartilages were very much dilated or expanded, giving to the nose a markedly pugged appearance.

In the examination of the interior of the nose, the middle turbinated bodies were found very greatly hypertrophied, which doubtless had much to do with the outward bulging of the nasal bones.

The operation in this case consisted, first, in removing the hypertrophy of the middle turbinated bones. The bone flaps were then made from the expanded nasal bones, subcutaneously, and placed on the dorsum, which gave that portion of the nose normal contour. The expanded portions were then reduced by subcutaneous incisions through the cartilage. They were, however, so much expanded that it was necessary to reset some

The second method is illustrated by the following case: Miss B., of New York, was, by her medical adviser, referred to me for the correction of a deformity of the nose, which resulted from being thrown from a carriage and striking on the nose and fracturing it, ten years before. She was so ill for a short time after, that cerebral complications were feared and, in consequence, the nose was allowed to go uncared for. As a result of the fracture, the right nasal bone was depressed and the left one displaced outward, making the nose very crooked and producing the condition which would be termed by a blacksmith



Fig. 23.



Fig. 24.

portions of the shield cartilage, in order to reduce the end to a size proportionate to the dorsum of the nose. The parts were then held in place until firmly fixed in position, as shown in Fig. 22.

Lateral Deflection of the Bony Portion of the Nose.

This deformity may be corrected by two different methods. First, by refracturing the bones and holding them in the desired position until firmly fixed. Second, by a subcutaneous osteo-plastic operation, which consists in elevating the skin from the dorsum, sawing off with a slender saw the projecting portion and placing it in the depression on the other side of the nose.

The first method has been illustrated in the second case cited of angular deformity of the bony portion of the nose.

"an offset" in the middle of the nose, as shown in Fig. 23.

The condition of the nose was such that refracturing of the nasal bones so as to elevate the right nasal bone and depress the left one was not advisable. The only resource left, therefore, was an osteo-plastic operation. The skin from the dorsum was accordingly raised and the bulging portion of the left nasal bone was carefully sawed off, leaving as much of the soft parts attached to it as possible. It was then carried over the bridge of the nose and placed in position in the depression on the right side, completely filling it. Union of this flap with the bone was encouraged by denuding the bone of periosteum at this point before the flap was placed in position. It was

carefully held in this position until united and thoroughly fixed. The two sides of the upper portion of the nose were then perfectly symmetrical. The lower portion of the nose was distorted to the left by a deviation of the cartilaginous portion of the septum. This deformity of the septum was corrected, making the nose perfectly straight. A third operation was found necessary to remove a redundancy of the alæ on the left side. The nose was then carefully held in position by a dressing adapted to it until it had become thoroughly fixed in the desired shape, leaving the nose perfectly symmetrical, as shown in Fig. 24.



Fig. 25.

II. CARTILAGINOUS PORTION.

Excessive development of the tissues of the tip of the nose, the so-called pug or snub nose, is corrected by removing the redundant tissue from the end of the nose subcutaneously. The operation is performed from the interior of the nostrils as illustrated by the following case: Miss F., age twenty-three, was referred to me for the correction of a deformity of the nose due to excessive development of the tissues at the end of the nose, giving it a very pronounced pug, as shown in Fig. 25. This condition had existed since childhood and was steadily becoming more pronounced.

The mucous membrane is first turned

back from the anterior surface of the interior of the nostrils, and the superfluous tissue removed, after which the mucous membrane was replaced. Bulging of the wings was also present in this case and the operation for reducing those was performed by very carefully incising the cartilage through to the skin in several places, so as to remove all elasticity without wounding the skin. The nose was held in place by an external dressing until healed in the desired position, as shown in Fig. 26. In some cases it is necessary to supplement the main operation by minor ones until the desired degree of perfection is attained.

Defective development of the tip of the



Fig. 26.

nose. This deformity is corrected by filling in the deficiency with tissue from adjacent parts, by plastic operations, performed subcutaneously, varied according to the requirements of the case. The methods by which this defect can be rectified is demonstrated by the following two typical and interesting cases:

Case I.—A young man, aged eighteen years, was referred to me by his family physician for the correction of a deformity and flattened condition of the end of the nose, which was congenital, or at any rate had existed from infancy. This deformity was so conspicuous that people on the street and elsewhere would frequently turn to observe him. This was so annoying to him that he would rarely mingle in society, and shunned people as much as possible. In this case the anterior and superior portion of the

triangular cartilage was missing, and the flattening of the end of the nose and the consequent lateral bulging of the alæ gave it the appearance of a frog-shaped nose, as shown in Fig. 27. Besides this, the frenum of the nose was attached so low down on the lip as to cause the end of the nose to slant back-



Fig. 27.

ward, and the nostrils to stand prominently open, aided by the upward tilt of the end of the nose.

To correct this deformity, it was necessary to adopt a special plan of operation for raising the end, instead of depressing it as in the operation for pug-nose just described. In order to reduce the width of the nose and at the same time to raise the end and take away the very flattened appearance, sufficient tissue



Fig. 29.

was taken from the interior of the alæ on each side to form a flap, which was carried upward and held in place under the skin, which had previously been raised at the tip of the nose. It required two operations at different times to accomplish this. In order still further to raise the point of the nose, the frenum was lengthened and its attachment to the upper lip set

higher up. This was done by cutting through the anterior column of the frenum on a line with the upper lip, then carrying the incision upward about half the length of the frenum and then backward, forming a stair, and then upward to a distance equal to the length of the first horizontal incision through the fre-



Fig. 28.

num, so that the lower end of the frenum would fit into the second stair, so to speak. The lower end of the frenum was then set into the second stair, and carefully stitched there. The skin on each side of the lower end of the frenum from which the anterior column had been removed was then raised and the edges drawn together in front of this denuded surface, so that on healing no perceptible scar was left. Two or three minor operations were



Fig. 30.

required to complete the work, as shown in Fig. 28. So symmetrical and perfect is the nose that those unacquainted with the young man would not suspect that his nose had been at any time deformed.

Case II.—A girl sixteen years old had had from infancy an extremely flattened condition of the nose, the result either of an unrecog-

nized abscess of the septum or a congenital defect, there being no history of inherited specific disease or evidence of tuberculous taint. Examination showed that the nasal bones were normal, but the triangular cartilage of the septum was entirely absent. The soft parts were present in their normal propor-

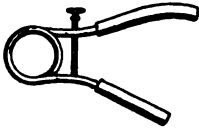


Fig. 31.

tions, but so flattened upon the face, from lack of central support, as to give the girl a very unsightly appearance, as shown in Fig. 29. The difficulty in this case was to find enough material to render the septum sufficiently firm to hold up the end of the nose. There was, as is usual in these cases, a marked widening and thickening of the dorsum of the nose proportionate to the amount of flattening. This thickened ridge of tissue was incised through to the under side of the skin on both sides a short distance from the septum, at a point where it thinned into the *alæ* of the nose. The skin was then raised from the dorsum of the nose, and the flaps were turned upward and held in place by small ivory splints, having holes through which sutures were passed from one to the other through the flaps and tied so as to hold them firmly in place without strangulating the parts. This relieved the flattened condition of the nose, and also gave the dorsum a sharper appearance. The end of the nose was, however, altogether too low.

Owing to the entire absence of the triangular cartilage, there was not sufficient central support to hold the nose up. In order to do this, and to increase the solidity of the septum, I first scarified each side of the lower portion of the septum and the floor of the nose, and divided the anterior portion of the septum, leaving the front portion of the skin intact. I then cut wide, thick flaps from the floor of the nostril opposite the portion of the septum which I wished to render more rigid. The end of the nose was then raised and the flaps turned up and held together with clamps in a manner similar to the upper flaps, and their upper ends connected to the under end of the cut portion of the septum with fine sutures. The result was most excellent; for the flaps, when united, were found sufficient to support it and to give the nose a very presentable appearance—so much so that it would not be suspected that the previous very flattened condition had ever existed, as shown in

Fig. 30. In order to maintain the nose in position until the parts became thoroughly healed, I placed in each nostril small spiral springs (Fig. 31), the upper arm being bent to the proper contour, so as to lie along under the dorsum, the other arm lying along the floor of the nose. The tension was regulated by bending the spring to the desired tenacity before introducing it. These springs were worn until the tissues had become firmly fixed and self-supporting and their further use unnecessary, the nose having then assumed a handsome, symmetrical appearance.

DEVIATIONS OF THE END OF THE NOSE.

The correction of this deformity consists in so liberating the tissues by subcutaneous incisions that the nose can be placed in its normal position in the median line, and held there until firmly fixed, as illustrated in the following case:

Mr. C., aged forty, was thrown from his wheel, striking the end of his nose against a curb, causing some contusion of the nose, followed by a considerable swelling and inflammation. When this had subsided, the end of the nose was found to be deflected markedly to the right. This condition was allowed to go uncared for, and at the time when I saw him, two years later, the end of the nose was set over to the right side, and there was, at the same time, a marked bulging of the left nasal bone, giving the nose a very distorted appearance, as shown in Fig. 32.



Fig. 32.

Fig. 33.

There was also a marked depression in the centre of the nose at the junction of the upper shield cartilage with the nasal bone.

An examination showed that the triangular cartilage had been dislocated, to the right, and the left nasal bone fractured, and thrown outward. The operation in this case consisted, first, in cutting loose, subcutaneously, the cartilaginous portion along its base, and also at its junction with the vomer, and setting it in the median line. The bulging portion of the left nasal bone was sawed off and placed in the depression in the dorsum, which filled in the gap completely. The nose was then held

in place until the parts were entirely healed in their normal position, as in Fig. 35.

COLLAPSE OF THE WINGS OF THE NOSE.

The operation in these cases consists in incising the lower shield cartilage, and in some cases the upper shield cartilage also, sufficiently to overcome their elasticity, and then to hold them in the de-



Fig. 34.

sired position until fixation of the tissues has taken place, as illustrated by the following case:

Miss B., aged twenty-three, had had difficulty in breathing through her nose for several years. On examination, the wings of the nose were found flattened and collapsed against the septum, giving very little space for respiration. To overcome this contracted condition, the interior of the nose had previously been cauterized, in order to increase the patency of the nostrils, but which had had the effect to contract, rather than to increase, their capacity.

The nostrils were not only collapsed against the septum, as shown in Fig. 34, but the lateral shield cartilages were set so close to the septum as to give little opportunity for expanding the nostrils. In order to overcome this condition, the base of the lateral shield cartilages were cut loose, subcutaneously, and the outerlying tissues dissected up sufficiently to allow each one to be set out a sufficient distance to give ample room for the nasal passage. This was done subcutaneously, so as to prevent any cicatricial contraction of the interior of the nostril on healing. The elasticity of the lateral cartilage was overcome by subcutaneous incisions, with a very slender knife. The nostrils were then held in the desired position by an internal support, consisting of a hollow tube of celluloid, formed in the desired shape. This support was maintained until the parts were firmly fixed in position, as shown in Fig. 35.

EXPANSION OF THE WINGS OF THE NOSE.

The operation for the correction of this condition consists in overcoming the elasticity of the wings by incisions through the shield cartilages subcutaneously with a slender knife in several places, and then holding them in place by an external form until they are firm-



Fig. 35.

ly fixed in the desired position. In some instances the cartilage is so redundant as to require the excision of a portion of the same.

It is unnecessary to cite cases to illustrate this condition, for the method of correcting this deformity has been illustrated in two or three of the cases already cited.

DEFLECTION OF THE WHOLE NOSE.

Fig. 36 illustrates a case of deviation of the whole nose, which was evidently of congenital formation, as there was no



Fig. 36.

history of any accident that might have caused the condition. Usually, however, this condition is the result of accident.

The operation for correcting this deformity consisted in fracturing the nasal bones on both sides in the manner al-

ready described, and liberating the septum along its base. The nose was then placed in the center of the face, and held there, in the manner described in the report of the second case of angular deformity of the bony portion of the nose, until fixed in its normal position.¹

As I have stated in the previous papers already referred to, no two cases of nasal deformity are exactly alike or require exactly the same operation, for, no matter how much they appear alike externally, the conditions will be sufficiently varied to require a special study of each case before any operative procedures should be undertaken, as briefly illustrated in the few cases I have selected for demonstration.

There are three conditions which must be observed in order to insure success in these operations. In the first place, although it is hardly necessary so to state, the utmost antiseptic and aseptic precautions must be adopted, for, if suppuration in the wound should take place, engrafted tissues would be destroyed, and not only would the object of the operation be defeated, but the deformity of the nose would be increased thereby. In the next place, the plan of the operation must be carefully studied in order that the tissues at our disposal may be utilized to the best advantage. In the third place, and not less important than the operation itself, the greatest care and the most vigilant attention are required, for no matter how well directed the operation may be, the object cannot be attained unless scrupulous attention is paid to the healing process.

These operations on the nose, therefore, are not attended with the imme-

diately brilliant results possible in many operations performed on other parts of the body, which can be completed at one time, the wound requiring only to be maintained aseptic until the cure is complete. On the contrary, these operations on the nose require frequent and most careful attention. The parts must not only be held in place by retentive appliances, but the shape of these appliances and the dressing must often be changed from day to day as the swelling subsides and the union of the parts takes place. It may be necessary to add a little internal or external pressure here and remove a little there until the fixation of the tissue is complete.

Without this careful attention to detail by the surgeon, and the most faithful compliance on the part of the patient with regard to all instructions, failure and disappointment will be the almost inevitable result, for, in no part of the body is the tendency for the tissues to revert to their former condition and position so strong as in the nose.

Frequently the principal or main operation must be supplemented by minor operations for the correction of slight defects. An unduly prominent portion may require lowering, a depressed part may require raising, and so on until the work is completed. To paraphrase, we might say in these cases that eternal vigilance is the price of a perfect nose.

When considering the vast change made in the appearance of the nose by a slight alteration or departure from its symmetry and the wondrous changes made in the facial appearance and physiognomy of the person by its disfigurement, it is readily seen why the nose is regarded as one of the most distinguishing of racial characteristics.

¹ Three of the cases cited have been used for the illustration of previous articles. They are, however, typical and, to save the necessity of making other similar cuts, I have reproduced them here.

A CASE OF ELEPHANTIASIS OF THE PENIS.

BY GEORGE HENRY FOX, M. D.,

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THE rarity of elephantiasis in this country warrants a brief report of any marked case, and, although no detailed history of the case now reported can be given, the accompanying illustration will convey to the reader a better idea of the clinical appearance presented than many pages of description.

The patient, a locomotive engineer, was brought some years ago to the Skin and Cancer Hospital, where the writer had the opportunity of obtaining several photographs. At that time the disease had existed for several years, and the penis had attained such an unusual size that in the standing position it reached

than the penis, and was notably free from the superficial lymphatic varicosities usually seen in elephantiasis of this organ.

It is well known that the rare cases of sporadic elephantiasis seen in this country,

whether of the legs, arms or genitals, usually differ somewhat from the cases met with in tropical countries, where the disease is endemic. There is frequently an entire absence of the severe, paroxysmal, erysipelatoid attacks, accompanied by high fever and severe pain. The disease seems to run a milder and much less uncomfortable course, and the growth gradually increases in size. In this case the disease had begun without apparent cause,



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Elephantiasis of the Penis—Under Surface of Penis and Scrotum.

quite down to the knees. The hypertrophied tissue was remarkably dense, the skin being smooth and of almost normal hue. Numerous deep and parallel sulci traversed the organ, giving it a peculiar convoluted appearance. The scrotum was involved to a less degree

had slowly and painlessly developed, and given rise to nothing more than the sensation of weight and discomfort. This was relieved by an operation later, performed by Dr. L. L. Seaman, which restored the organ to something nearer its normal size.

TUBERCULOSIS OF THE URINARY TRACT—

A Study of Thirty-four Cases.

BY ALBERT VANDER VEER, M. D.,

AND

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THE study of tuberculosis of the urinary tract is an attractive one.

Frequently obscure in its early symptoms, the diagnosis requires accurate observation, modern instruments of precision and the assistance of well-equipped laboratories. A director of a large pathological laboratory, commenting recently on urinary tuberculosis, made the observation that it was either more common or more frequently suspected than formerly, because of the frequency that specimens of urine were presented for examination for the tubercle bacillus. It is quite without the province of this paper to discuss the spread of tuberculosis, but there can be no doubt that the profession is more alive to its frequency in the urinary system.

With the possible exception of the ureter, tuberculosis may appear in any part of the urinary tract as a preliminary infection. The two most frequent places of origin are at the base of the bladder in the vicinity of the prostate, and in the kidney. It is from these origins that secondary infections occur, either ascending or descending, the character being dependent upon the seat of original infection. A very fortunate condition frequently exists in the natural resistance of the urinary tract to the spread of the disease. A chronic tubercular process has been known to be present in a kidney for years without the secondary involvement of the bladder, although the urine constantly contained pus, caseous mate-

rial and tubercle bacilli in abundance. Too frequently is the secondary infection of the bladder the result of unskillful instrumentation in searching the bladder for suspected stone. Already a considerable number of cases of primary tuberculosis of the urethra have been reported. The condition is more frequently found in the female, although a few cases have occurred in the male.

The following clinical notes are of interest as illustrating, first, an error in diagnosis; and, second, the necessity for bacteriological examination of urethral discharges as a routine of the clinic:

J. D., age 26, single, native of Italy, a laborer, presented himself at the clinic of the Albany Hospital in August, 1898. He spoke little English, and it was difficult to secure a definite history of his illness. It appeared that some weeks before, a urethral discharge had appeared after a severe exposure to the weather. He denied having had within the time sexual intercourse. From his description, the symptoms closely resembled those of a virulent specific urethritis, and the physical appearances of penis, as well as the microscopic character of the discharge, were those of gonorrhea. The only symptoms which especially attracted attention were the fact of repeated urethral hemorrhage and great pain after urination continuing after the acute stage of inflammation. He was given the usual treatment for gonorrhea. He was next seen the latter part of October, at which time he had grown much worse, lost flesh, had a continued fever, and there were indurations in each epididymus. At this time he was admitted to the hospital, and the following day a careful exploration of his urethra and bladder was made. The precise nature of the in-

fection not being established, orders were given for a bacteriological examination of the urethral discharge and urine. After the instrumentation his condition became very serious, chill, fever, suppression of urine, and was followed by death in forty-eight hours.

At the autopsy, performed twelve hours after death, general tuberculosis of the genito-urinary tract was found, as well as areas of miliary tubercle in other organs of the body. From the clinical history and the result of the autopsy, it seems to me fairly well demonstrated that this man never had gonorrhea, but a tuberculosis beginning in the urethra, secondarily involving the prostate, seminal vesicles, the testicles and appendages, the bladder, ureter, kidneys, and finally the entire system.

In this same relation a second case presents itself:

Mr. J. A. C., aged 29, single, native of the United States and a commercial traveler by occupation. Mr. C. gave a history of several attacks of specific urethritis with a subsequent complication of stricture and a chronic urethral discharge. After operation by a very competent surgeon upon his strictures, he experienced no material relief from his discharge and had frequent and painful micturition added to his discomforts. Upon our first examination, after careful irrigation of his anterior urethra, on passing the Nitze endoscope and collecting the discharge from the deep urethra, a number of tubercle bacilli were found. Palpating the prostate with a sound in the bladder and the palpating finger in the rectum, areas of tenderness were readily found. A median perineal incision with a partial prostatectomy and drainage was followed by the temporary relief of the condition. Sufficient time has not yet elapsed to determine the permanency of the cure.

In the experience of other writers, tuberculosis frequently grafts itself upon chronic urethritis, and undoubtedly a very large number of cases of gleet, which are particularly rebellious to treatment, will be found after careful bacteriological examination to be tuberculous in character. In primary tuberculosis of the urinary system, undoubtedly in the larger proportion of cases the origin is

hematogenic. A very few cases in women may have their origin as direct contact infections from tuberculous ulcers in the vagina and about the cervix uteri, and subsequently extending by continuity. These cases are undoubtedly very rare. A few other cases doubtless originate from the use of infected instruments. Again, in a considerable number of cases, the infection is secondary from the genital system, but our own observations do not confirm the opinion in general, namely, that genital tuberculosis is a most frequent etiological factor in that condition found in the urinary tract.

Urinary tuberculosis, for the purposes of diagnosis and treatment, should be considered from a dual standpoint: First, as a local manifestation of a general systemic infection, as it is frequently observed in acute miliary tuberculosis; and, second, as a purely local disease. Certainly the latter form is the only one amenable to surgical treatment. It is the form less acute in its course and associated with caseation, softening, suppuration and local necrosis. This is the common primary infection in the kidney and bladder. An inquiry into local tuberculosis of the urinary tract from a surgical standpoint naturally leads to the more particular consideration of those organs which are most amenable to surgical intervention, namely, the kidneys, ureter and the bladder in the female. Also the precise location and extent of the different foci are of great importance to the surgeon in arriving at a conclusion concerning the proper course to pursue in the subsequent management of the case. Therefore, it is essential that each case shall be considered by itself and the feasibility of surgical intervention decided, not upon abstract principles, but upon absolute conditions presenting directly to operator.

In the light of our experience, we are not able to take so serious a view of local

tuberculosis of the urinary tract as many do who have perhaps given more attention to its study. As our standpoint has been largely clinical and surgical, it is quite possible that our conclusions may be somewhat erroneous. Our pathological study has been incidental to clinical diagnosis, and we have not delved deeply into the bibliography of the subject. There can remain, then, but little aside from our personal views and the clinical histories of a small series of cases which will be more fully considered elsewhere.

The natural tendency of tuberculosis to heal finds no exception in the urinary tract. Cases without number can be cited where it is positively known that all the tuberculous tissue has not been removed, yet complete recovery has followed under appropriate treatment. Nearly every surgeon has had such an experience. Recently a man returned to express his gratitude upon whom the writers did a perineal section some years ago for drainage in tubercular cystitis. After the operation, having no hope of his ultimate recovery, he was sent into the country. Nature finished what the surgeon began. Youth, drainage, sunshine and wholesome living conquered the tubercular cystitis.

In our observation, again, it is very unusual for both kidneys to be involved in the process equally, unless it be an ascending infection. Where the infection is primary in a kidney, if the bladder is not secondarily involved, the other kidney will be found normal with but few exceptions, and in those cases the disease is but slight in the second kidney. It is a general surgical principle well recognised that if an active, local tubercular focus is accessible, to remove it surgically, as we can see no reason for becoming speculative when that focus is in the kidney. But, on the contrary, we should devote our entire attention to the study of its early clinical manifestations in or-

der that we may attack it early and with success.

Disturbances of the function of the urinary tract, apparently spontaneous in character, always demand the most careful clinical analysis and the exclusion of tuberculosis, as well as of diseases producing organic changes in the urine and neuroses. Vesical irritability, associated with an apparently normal urinary secretion, the daily quantity of which may vary between wide limits, is frequently an early symptom of tuberculosis of the bladder or kidney. Pain before, during and after urination, particularly if referred to the perineum or middle of the urethra, is an important symptom. Hematuria occurs in more than one-half of the cases of urinary tuberculosis wherever the initial lesion may be. It is frequently the first symptom that seriously attracts the attention of the patient. It is seldom as profuse as in tumor of the bladder or kidney, yet it may be continued and material. When from the bladder, the hemorrhage is usually associated with urination, and is expelled slightly mixed with urine at the beginning or completion of the act. Hemorrhage from the kidney either shows itself as a homogeneous mixture of blood and urine, or of broken blood casts of the pelvis, of the kidney and ureter. Portions of blood clot passing through the ureter frequently give rise to complex symptoms, closely simulating renal colic caused by calculus.

Pyuria with an acid urine, especially if intermittent in character, at once calls attention to a strong probability of renal tuberculosis. Again, a spontaneous and intractible cystitis should always be regarded in the same light as a spontaneous bronchitis—an indication of a tubercular process.

Retention of urine is frequently a pronounced symptom, in the earlier stages, of vesical tuberculosis. As the ulcerative process extends, involving the deep-

er structures of the bladder wall and prostate, it is succeeded by incontinence. In our experience there is nothing very constant, however, in either of these conditions. The physical examination of the patient without instrumentation affords no very material assistance. No appreciable increase occurs in the size of a strumous kidney until the disease is far advanced, and either perinephritic infiltration has occurred or a pyonephrosis is present from urethral invasion.

With such a series of symptoms presenting, the temptation is strong to proceed at once to an instrumental exploration of the urethra and bladder. As a rule, this should not be done unless the surgeon is satisfied that the urinary tract has already been infected by previous examinations. The urine requires the most painstaking analysis. Always secure the specimen, if possible, at the patient's first visit. Have the glans or vicinity of urethra carefully washed with soap and water and finally with borated solution. One must make sure that all smegma is removed so that the urine is not contaminated by the smegma bacillus. The urine is now voided in a sterilised flask, which should be plugged as in the laboratory. Before natural precipitation has had time to occur, the urine should be divided into two portions, one for immediate examination and the other reserved for further study. After the usual chemical examination, the remainder of the first portion should be put in the centrifuge and precipitated. It is desirable to secure a considerable amount of precipitate whenever possible. The usual microscopical examination may show, besides pus, blood and localised epithelial cells, granular material and disintegrating tissue elements. Portions of the sediment is now prepared in the usual way on cover slips and stained for ordinary pyogenic organisms, for the gonococcus and for the tubercle bacillus. A number of slips should be stained for

tubercle bacillus. If by this method the tubercle bacillus is found, one may at once proceed to the instrumental exploration for the purpose of the localisation of the disease. However, it frequently occurs that the most painstaking examination with the microscope fails to demonstrate the tubercle bacillus, even when the disease is present; but wherever a suspicion exists, the inoculation of a guinea pig with a portion of the sediment of the reserve urine is demanded. In this way only can the presence of tuberculosis be disproved.

The localisation of a tuberculous process in the urinary tract, and the determination of the extent of tissue involved is all important in the subsequent prognosis and treatment of the condition. In the female, cystoscopy and catheterisation of the ureters has been made practicable if not easy by the method of Powlik and Kelly. While few may acquire that delicate precision with which Dr. Howard A. Kelly catheterises the ureters in the female, we are convinced that all may, by a careful study of his methods, attain a practical proficiency. This method closely followed leaves little to be desired in the exploration of the female urinary tract, and much can be done in the way of treatment through the cystoscope in tubercular ulceration of the bladder wall.

Cystoscopy and ureteral catheterisation in the male presents far greater difficulties. The added tube-length of the Kelly male cystoscopes increases many fold the difficulties of introduction and illumination. Besides, it is extremely difficult to pass a catheter the full length of the tube into the ureter. The method of Harris is not sufficiently precise to warrant its employment. The cystoscope devised by Nitze and so generally employed is an admirable instrument for the exploration of the bladder. A single rotation of the instrument on its axis showed the pictures (Figs. II., *a* and *b*)

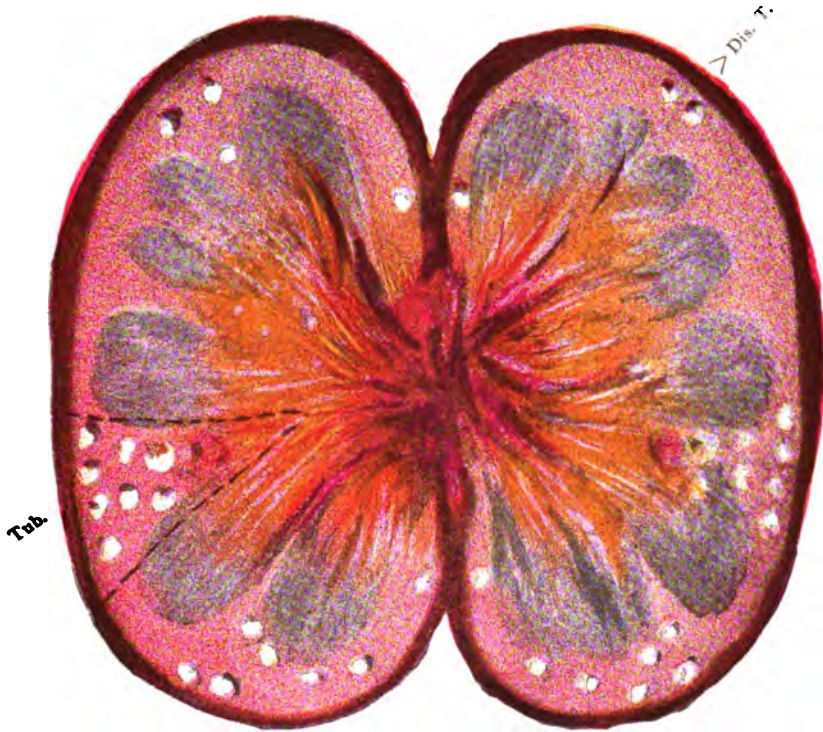
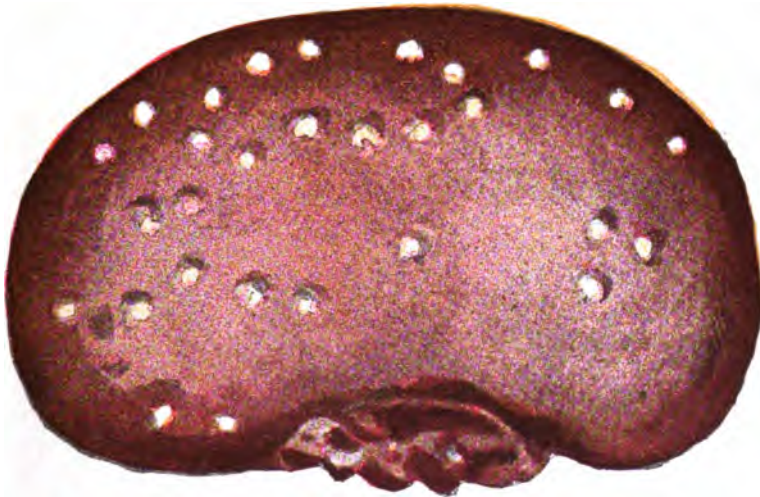


FIG. 1. (a).



(b)

FIG. 1. (a).—(Dis. T.), Disore tubercle. (Tub.), Gray tubercle grouped in portion of kidney supplied by single arteriole. (b) Gives appearance of tubercle after nephrectomy.

The patient, J. S., aged nineteen, a blacksmith, had been ailing for several weeks from obscure urinary symptoms. The sudden onset of hematuria and the development of a perinephritic abscess led to the exploration and removal of the right kidney. Recovery.

J. S. has since developed general tuberculosis.

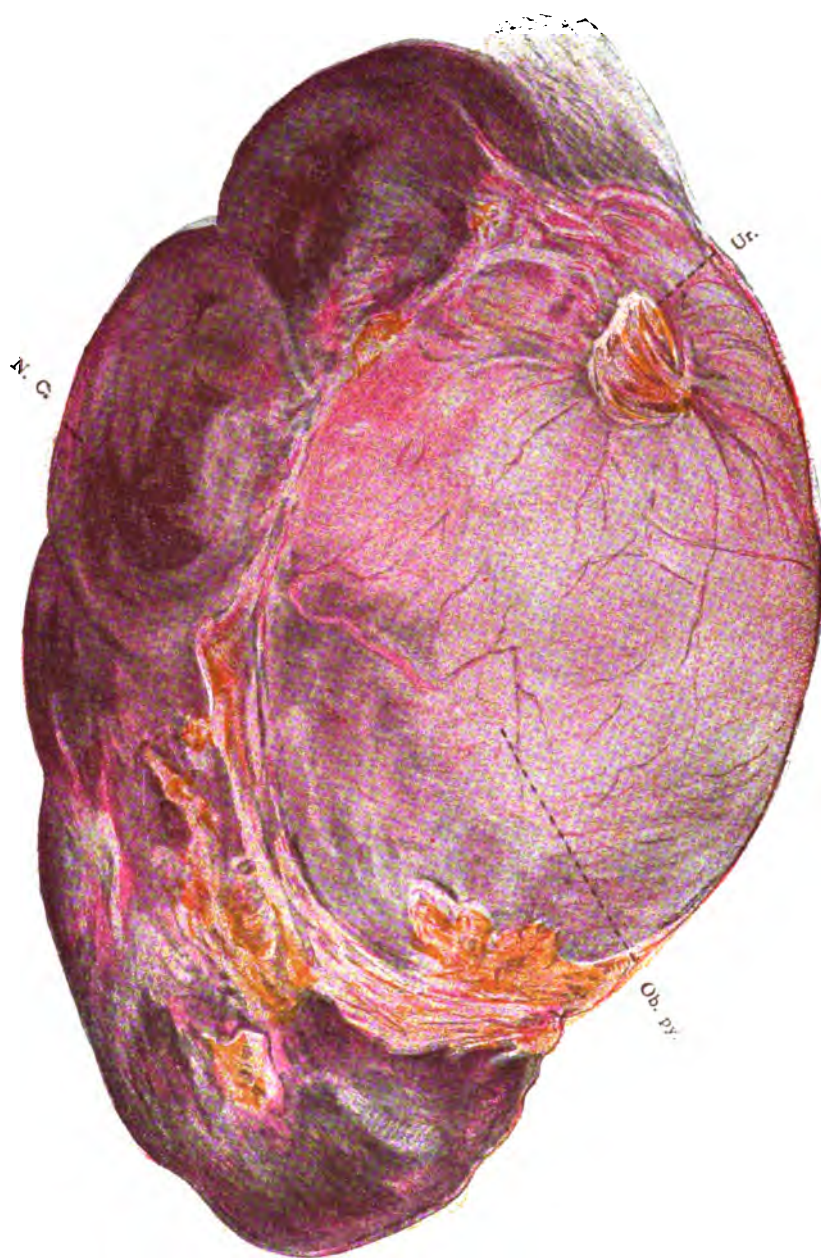


FIG. II.

FIG. II.—(N. C.), Normal kidney cortex. (Ur.), Ureter already involved in tubercular process. (Ob. py.), Dilated pelvis of kidney, containing pus, caseous material, etc.

This kidney was removed by nephrectomy (oblique incision), from Miss A. F., aged twenty-six, a dressmaker. Disease had existed over two years, and from symptoms was diagnosticated as stone impacted in pelvis of kidney. The operation showed, however, tuberculosis of ureter and pelvis of kidney. Kidney and greater portion of ureter removed. Recovery, and has remained well two years.

FIG. III.—(H. C.), Healthy kidney cortex. (A. S.), Areas of sclerosis containing gray tubercle. (M. T.), Discreet miliary tubercle involving healthy kidney substance.

Henry B., aged twenty-nine, a molder, had suffered from several attacks of hematuria. Urine contained, besides, pus and tubercle bacilli. Bladder not involved; right-sided renal colic. Nephrectomy; recovery, and is now in good health, although sinus persisted for several months. He is now following usual occupation.



FIG. III.



FIG. IV.

FIG. IV. represents a kidney showing far more pronounced infection than FIG. III. In this case the fatty capsule of the kidney was much infiltrated, but not entirely removed. While the patient's condition has improved materially since the nephrectomy, yet there remains a troublesome sinus which refuses to heal.

FIG. V.—Advanced tuberculous nephritis. (I. F. C.), Infiltrated fatty capsule of kidney. (B. C.), Blood clots in pelvis of kidney. Had had a severe hemorrhage just previous to operation. (Tb. A.), Tubercular abscesses. (Cor.), Small portion of normal cortex.

This kidney was easily palpated and had been affected for several years. The operation was completed with great difficulty, and artery clamps were left in place instead of ligatures. This patient is reported well and strong, nearly three years after operation.

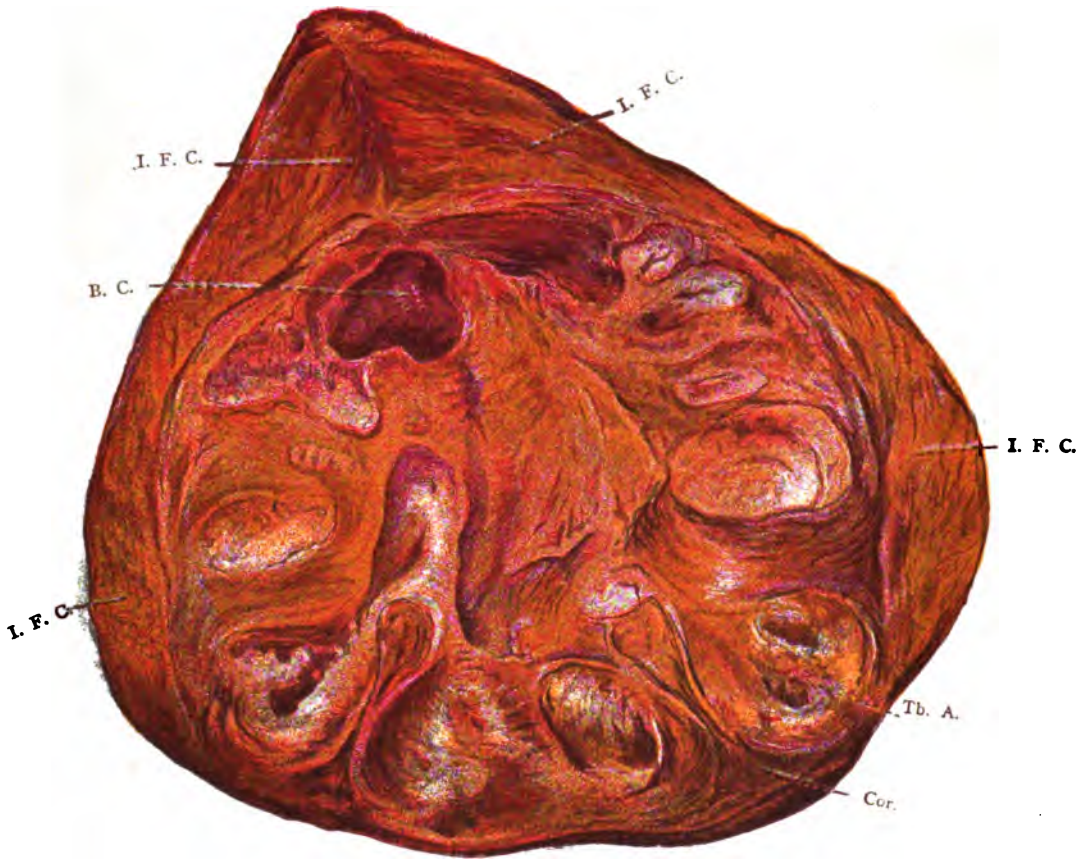


FIG. V.

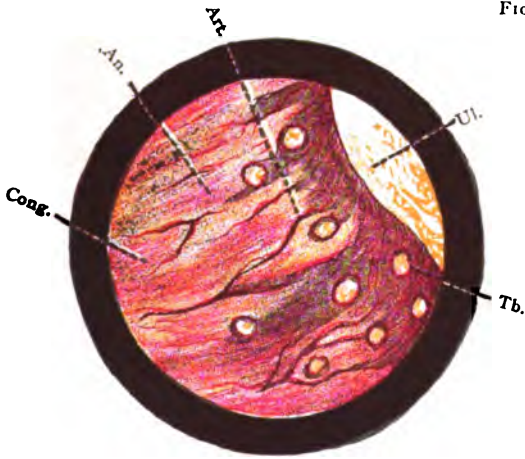


FIG. VI. (a)

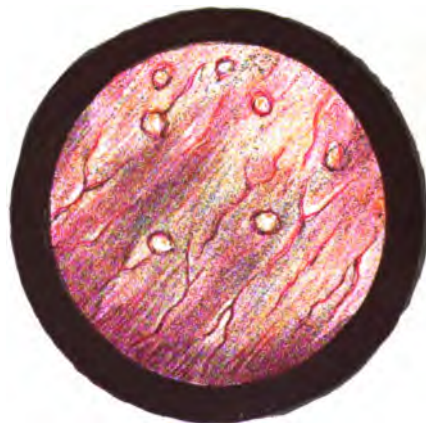


FIG. VI. (b).

FIG. VI. (a).—Cystoscopic picture magnified eight diameters, showing: (Ul.), Ulcer at border with flakes of mucous and pus. (Tb.), Miliary tubercles in relation to arterioles. (Art.), Arterioles dilated. (An.), Areas of anemia. (Cong.), Areas of congestion. Drawn from case of general urinary tuberculosis.

FIG. VI. (b).—Same course as (a), but showing relations of tubercles to bloodvessels

in a case of general urinary tuberculosis, and convinced the writers that all surgical intervention could only be palliative. Frequently the cystoscope alone can be employed to determine the condition of the kidney. The deeper congestion of the opening of one ureter, as compared with its fellow, or a group of miliary tubercle about one, furnish signs of great diagnostic value. Occasionally eddies of turbid urine can be seen about a ureteral orifice.

The very important invention of Dr. Leopold Casper has made the catheterisation of the male ureter practicable. Fig. 7 and its explanation sufficiently describes the instrument.* We have found

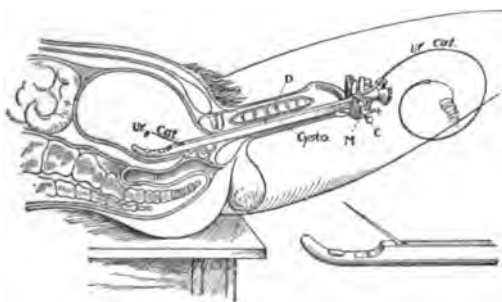


Fig. 7.

Ureter Cystoscope (Dr. Leopold Casper's). Schematic Drawing. (bl.) Bladder; (ur.) ureter; (ur. cat.) ureteral catheter; (cysto.) ureter cystoscope. Further description in text.

the Casper method entirely feasible in the differentiation of the kidney secretion.

* The instrument is connected with the cable by means of contact pegs, which are shoved into the lower end of the instrument.

The peg shown in the illustration is the positive. The current is closed by means of the contact screw "c" on the side of the instrument, which, when screwed tight, completes the circuit. To introduce the catheter, a canal is supplied which is closed by a cover "d," and has a cylindrical prolongation at its lower end. A lever "m" is fastened onto the cover and permits of movement backward and forward, facilitating the greatest dilatation of the opening at the upper end of the cystoscope for the passage outwards of the body. In introducing the catheter the lever is drawn forward, thus dilating widely the entrance of the catheter. If the end of the catheter projects beyond the opening, then the end of the catheter can be bent somewhat.

Through the enlargement or reduction of the opening, one is able to direct the point of the catheter after its introduction into the bladder, so that with joint movement of the cystoscope the end of the catheter presses into the opening of the ureter. To remove the cystoscope the anterior cap is pulled out, the lever is elevated, allowing the cover to be drawn out of the instrument. With the cover the free end of the catheter is pressed out of the cystoscope, and replacing the cover, the cystoscope is movable and can be extricated while the catheter remains in the bladder.

By the employment of the methods already detailed, the differential examination of the urine can be made, and other factors so minutely studied that a precise localisation of tubercular process can be attained as a basis for intelligent treatment.

We have taken occasion heretofore to refer to the great danger of instrumental exploration in urinary tuberculosis. It is our practice to make but one examination, and that under elaborate aseptic precautions. Cocaine anesthesia is satisfactory except in advanced cases of tubercular cystitis, when a general anesthetic must be employed. The utmost gentleness is necessary.

In our experience the symptoms of urinary tuberculosis are almost invariably aggravated by instrumentation, however carefully performed. Many cases of bladder tuberculosis are made infinitely worse by passing sounds and inducing a mixed infection.

The necessary limitation of this paper forbids the giving of extensive case-histories or any analytical study from the standpoint of others. If we are to give credence to our own experience, the prognosis is far more favorable than has heretofore generally been believed. Doubtless the recent improvement in results can be attributed to better clinical methods and improved surgical technic. Again, we may be allowed to express our opinion that tuberculosis in every organ is becoming better understood, and is surveyed from a far broader basis than ever before. Tuberculosis affords one of the first fields for survey, and whenever the foci are accessible to surgical intervention the disease is curable.

We have already detailed the histories of two cases of urethral tuberculosis in the male, and are to add another in the female. The latter case yielded to treatment without great difficulty. Urethral dilatation, followed by the use of the curette, lactic acid and iodoform through

the endoscope, resulted in the final cure of the case.

Tuberculosis of the bladder walls has proved most rebellious to any and all forms of treatment. The suffering associated with tubercular cystitis is immeasurable. The patients are in a most pitiable condition, and will consent to any plan of treatment that promises to afford relief. The usual methods employed are palliative in the majority of instances. Out of a series of eight cases drainage was followed by cure twice, and pronounced improvement once. The remainder were made more comfortable, but it is extremely doubtful whether, in any of them, life was prolonged by surgical intervention. Considerable discussion has occurred concerning the proper method of intervention. Both the suprapubic and perineal route have been employed, and both have their advocates. In a general way, the perineal route is to be preferred, as affording the easiest access and the best drainage. The danger of subsequent local wound infection is not greater in the perineal sinus than in the supra-pubic one. In the female, drainage can be supplemented by local treatment with lactic acid and iodoform. In certain cases, where the process is distinctly local, either partial resection or total extirpation of the bladder, with urethral implantation into the rectum, may be required. This operation has already been performed successfully, and seems feasible.

We have a series of twenty-three cases of tuberculosis of the kidney and ureter, treated surgically, during four years ending January 1, 1899. Eighteen nephrectomies were done, with an immediate mortality of five; thirteen nephrotomies were also performed, with three deaths following immediately after operation, and three, remotely, from exhaustion, or secondary nephrectomy. It will be noted that there were thirty-one operations done on twenty-three pa-

tients. In a considerable number of cases, the operation of nephrectomy was secondary to a nephrotomy and drainage, and in a few other cases the sinus following nephrotomy or partial nephrectomy subsequently received a curettement. Our clinical histories are not absolutely clear concerning these points.

The proper estimation of the value of nephrotomy and partial nephrectomy, in the treatment of local renal tuberculosis, requires careful consideration. Out of thirteen cases operated, four died from causes immediately associated with the operation—*i. e.*, shock and uremia; one died, remotely, from exhaustion, due to prolonged suffering, and two died from subsequent nephrectomies. Of the remaining six cases, two are well, after prolonged treatment; one has a permanent fistula, discharging pus and urine, but is in fair general health; while the others recovered, after complete nephrectomies. Our experience coincides with that of many others—namely, that nephrotomy has very little value as a curative operation in renal tuberculosis. On the other hand, the operation has a distinctive value as a preliminary and exploratory measure. We frequently avail ourselves of a preliminary nephrotomy with drainage in neglected and obscure cases. The operation does not seriously tax the strength of the patient, allows accumulated pus to be evacuated, and sepsis to subside before undertaking the more serious operation of nephrectomy. We are convinced that by employing this preliminary measure, the patient is given an opportunity to rally from infection and is much more likely to recover from nephrectomy. Cases in which urethral obstruction exists, with large accumulations of purulent fluid in the pelvis of the kidney, are best treated in this way.

Twelve patients made recoveries after complete unilateral nephrectomies. The associated ureter was removed three

times, and in several cases small portions of the ureter were removed with the kidney. In most cases the vessels of the kidney were tied separately. The adhesions following a preliminary nephrotomy gave, as a rule, little added anxiety. The results are regarded by us as most satisfactory. It is yet too early to disprove the notion that both kidneys are involved simultaneously in the greater part of the cases. Yet we are convinced that, even though the second kidney may be slightly involved in the process, the first one should be removed at once. There are uncontested cases of recovery under such circumstances. By these methods, thirteen final recoveries in twenty-three cases of renal tuberculosis have been secured.

The operative technic employed has very closely followed the lines presented so carefully by Dr. Howard A. Kelly, and so graphically described by him in his recent text-book. It seems to us extremely desirable to remove the fatty capsule of the kidney whenever it is involved in the tubercular process. It will seldom be found necessary to employ clamps instead of ligatures in the vessels, unless a large mass of infiltrated fat is found about the kidney.

It may be said in conclusion that, of this series of thirty-four cases of urinary tuberculosis, thirty occurred during the four years' service of the writer in the Albany Hospital—a service presenting nearly twenty-four hundred cases of surgical disease.

SEPTIC WOUNDS AND DIPHTHERIA.

BY A. F. RODGERS, M. D.,
HAVELOCK, IA.

WHILE attending a case of obstetrics in September, 1896, I wounded my right hand. Within a few hours after the accident it became an angry looking wound, and in

48 hours it had taken on an erysipelatous character. The hand and forearm were badly inflamed, swollen to the elbow joint, with dark red streaks running to the shoulder. The pain in the hand and forearm were of a throbbing character, with frequent shooting pains to the shoulder joint and which radiated from the shoulder over the thorax. They were so severe I could not rest during the day or night. I commenced at once to vigorously poultice the hand and forearm. During the following two weeks the treatment was active and that usually employed for treatment of wounds. At the end of that time not having received any benefit from the treatment, I procured 100 Protonuclein Tablets and a bottle of Protonuclein Special Powder. I commenced taking two tablets every hour. At the end of three hours the pain was very much relieved, and in 12 hours it had entirely disappeared. I removed the remedies that had been previously applied to the wound and thoroughly cleansed it of all débris, and then dusted it thoroughly with Protonuclein Special Powder, using the powder very abundantly. In 24 hours the wound lost its angry character, in 48 hours healthy granulation began to appear and in 10 days the wound had completely healed. The only annoyance which I experienced was a fullness in the head and a ringing in the ears, such as one feels when taking quinine. These symptoms appeared 24 hours after commencing to take Protonuclein, but I continued the remedy, reducing the dose to one tablet every four hours. The above mentioned symptoms soon abated.

Late in the fall of 1896 I was called to a case of diphtheria in articulo mortis. The baby soon died. A young lady, 16 years of age, in the family, was also suffering from the same disease. I prescribed Protonuclein Tablets, two every two hours, and directed that the throat be thoroughly dusted with Protonuclein

Special Powder, by insufflation, every three hours. When I called the next day I was greatly surprised at the improvement of the case in 24 hours. The membrane was still there, but the area covered by it was not increased, and the surrounding parts had lost their dark, red and angry appearance. The case recovered perfectly within a week and there was no sequela. In the same family there was a five-year-old boy; to him I gave a Protonuclein Tablet every two hours, and he did not contract the disease. I am quite well aware that he might not have taken the disease if I had not given him the Protonuclein. The conditions of the family were such that I could not perfectly isolate the child, or I would not have trusted to the prophylactic power of Protonuclein. At that time I had not sufficient confidence in the remedy to do so.

Late in the fall and early winter of 1896 I had quite a number of cases of diphtheria. In every case in which I used Protonuclein the patient did well. With me it has been much more efficient and therefore more satisfactory than antitoxin. I do not use Protonuclein alone, but in connection with other remedies, such as strychnia, iron, etc., but in all my cases the "sheet anchor" is Protonuclein.

TREATMENT OF WOMEN AT THE MENOPAUSE.

The treatment of patients at the time of the menopause depends upon the conditions and characteristics of individual cases, climate, marital and home life, and constitutional dyscrasias and idiosyncrasies. The following are a few hints applicable to all: As little waste of nervous energy as possible; as few cares and responsibilities as possible; a cheerful home and companionship; moderate and daily exercise, but not to exhaustion; frequent bathing to free the pores of poisonous accumulations; all excre-

tions should be free and regular; massage where vitality is low and no exhausting hemorrhages have occurred; change of climate or scene where there are unhappy home surroundings; medicines should be selected for each case, as different symptoms appear. A vaginal examination should be advised in all cases as often as every three months, to be sure that no disease of the pelvic organs exists. The return of the menses after a period of several years is to be taken as a warning of some serious condition existing, and great care should be used in examining to find the cause.—
DR. A. B. DAKE.

THE SPHERE OF NUTRITIVES IN TYPHOID FEVER, PNEUMONIA, AND GASTRO-INTESTINAL DISEASES.

BY CLAUDE A. DUNDORE, M. D., PHILADELPHIA, PA.

IN the modern treatment of typhoid fever, pneumonia and, in fact, of any disease characterised by any great elevation of temperature which is maintained for a considerable length of time, the question of nourishment is the most important one.

With medicines it is possible to reduce temperature, relieve pain, produce sleep, etc., but without the proper aliment, the reconstructive processes not receiving the material to check the rapid waste which is going on, the patient becomes weaker day by day, and, when the crisis comes, very often dies from exhaustion, but a far better word would be starvation.

While the importance of proper feeding is recognised by the profession of to-day, yet there is a great diversity of opinion as to what constitutes the best nourishment; too many, I am sorry to say, deeming it necessary to give the patient as much ordinary food as possible, and losing sight of the fact that the quantity ingested is no sign of the quantity as-

simulated, and that a patient may be taking a large amount of food, and yet be slowly dying of exhaustion, due to lack of nourishment.

Milk has been depended upon as the routine diet in febrile diseases for many years, but broths of various kinds, and beef tea, and so-called nutrients of like character have been used, in enormous quantities, although experience has long since proved that they produce little more than a slight stimulating effect, and that their ability to sustain life, when given alone, is next to nothing.

Milk to the healthy individual, when taken in proper manner and quantity, is an ideal food; and also in many diseases, in which there is little or no rise of temperature, and, consequently, very little if any impairment of digestion, it answers admirably as a diet; but in all fevers, owing to a continued elevation of temperature, the digestive function is early interfered with, and, as a consequence, milk is of little or no value; a large proportion passing through the alimentary canal unassimilated, the amount varying according to the character of the case.

To remedy this defect, peptonised milk has been used, but, after a thorough trial, it does not meet our expectations; when thoroughly peptonised it is exceedingly bitter in taste, and nauseating in almost every instance, and when it is only partially peptonised it does not seem to have any advantages over ordinary milk as a diet, for a very small amount is assimilated, as is proven by the stools.

To sustain and support the strength of a patient through any disease which is accompanied by high temperature, and therefore impaired digestion, we must have a nutritive which fulfills the following requirements:

1. It must contain the proper proportion and quantity of animal and vegetable nourishment to sustain life.
2. It must be as nearly as possible entirely predigested.

3. It must be concentrated.

4. It must be palatable.

There are several nutritives of this nature before the profession, and I have had considerable experience with three of them, all of which have some merit, but for over two years I have used Trophonine alone, which to my mind more nearly meets the above requirements, and has given uniformly excellent results in a large number of cases.

Trophonine consists of beef, egg-albumen and the gluten of wheat in proper proportions and quantities to sustain life; it is predigested, and is absorbed without first calling in the aid of the digestive fluids, thereby aiding the reconstructive processes almost immediately.

The dose is very small as compared with other forms of nourishment and from one to two tablespoonfuls every two or three hours is easily taken in cases where the quantity of milk necessary to sustain life is not retained; it is vastly more palatable than any other nutritive of its class, the bitter taste of peptones being almost entirely eliminated.

In cases in which milk is digested in small quantities it has been the habit to use Trophonine as a supplementary diet, thereby necessitating less milk and aiding in its digestion, but in many cases of all kinds it has been used as the only nourishment for periods varying from two days to three weeks, and it is in these cases that the evidences of its nutritive value have been most marked.

It was given as the only nourishment for from one to three weeks in each of a series of eleven cases of typhoid fever, with gratifying results, and it is evident that as Trophonine is all absorbed, and leaves no residue to pass through the intestines and irritate the ulcerated area, there is less liability of hemorrhage, and tympanites and diarrhea are greatly lessened.

In seven cases of pneumonia of a grave

type, Trophonine was given alone for from two to three weeks; two table-spoonfuls being given every two hours, and in two cases, when during the critical period of the disease the stomach became irritable, an ounce diluted with an ounce of water was given by the rectum every two hours for from twelve to twenty-four hours, after which time the stomach again retained it.

In the gastro-intestinal diseases of both adults and children, when owing to inflammatory processes the digestive functions are either partially or entirely suspended, Trophonine is taken, retained and absorbed, as is evidenced by the results obtained in upwards of a hundred cases; as no residue is left to irritate any portion of the digestive tract, it is of inestimable benefit as a nutritive in the intestinal disorders of infancy when all other foods invariably act as irritants, increasing the inflammatory processes, and often producing convulsions and death.

MORE FRESH AIR FOR WOMEN.

Women, as they grow older, are apt to live much indoors. I believe the fat, flabby, paunchy woman, whether purple or pale, with feeble, irritable heart and "inadequate" kidneys, is usually the victim of rebreathed air. It must, I think, sooner or later be recognised that many of the increasing ills which it has been the fashion to charge on the "hurry and brain fag," incidental to the high state of civilisation and a large population, are in reality due to the greater contamination of the air we breathe by the waste products of that population, and that toxins excreted by the lungs will in time take high rank among these as both potent and insidious. If this should come to pass, the present ideas anent ventilation must be abandoned as utterly futile, and the need will be felt, not of letting a little air in, but of letting waste products out.—DR. JOHN HARTLEY, London.

Drink less, breathe more; eat less, chew more; ride less, walk more; clothe less, bathe more; worry less, work more; waste less, give more; write less, read more; preach less, practice more.—*Medical Record*.

The parent source of the leucocytes of the body is the thymus; the first leucocytes arising from the epithelial cells of the thymus.—DR. J. BEARD, London.

MY EXPERIENCE WITH PROTONUCLEIN.

BY A. B. FARNHAM, M. D.

MY experience is that of the general practitioner, purely clinical and unsupported by examinations of the blood. I have made free uses of the nuclein preparations since they were first introduced to the profession. For the last four years I have used Protonuclein Tablets, and, without further comment, let me mention the class of cases in which I have used them:

First in importance, phthisis. My attitude on the treatment of this disease (vid. my article in the *Boston Medical and Surgical Journal* of April 13) is, that we want to use all the agents that in the sufficient experience of our best men make for treatment, and not any one fad, altering and adapting our treatment to the individual. Protonuclein I have given almost invariably in these cases. That credit is due to it in the improvements, cessations of the symptoms and apparent cures has seemed plausible from cases where it has been chiefly depended on. Treatment of this disease is abandoned too soon. A patient should be told at the start that he must remain under treatment at least two years from the time of apparent cure. Let this lesson be impressed early. Apply to this disease the tonic-dose principles advocated by Prof. E. L. Keyes, in his treatment of syphilis. In addition to the tonic dose of whatever preparation of

creosote I give in my after treatment of consumption, I add Protonuclein as an additional safeguard. I give it on an empty stomach preceded by a copious drink of cold water—cold douche of the stomach in effect.

In anemia, neurasthenia and allied conditions, aided by strychnia and continued for months, I feel reasonably sure that the remedy is of the greatest value. After treating such cases one continues its use in graver conditions with a strengthened belief in its efficacy.

In the later stages of syphilis I use it on general principles.

In fibroid exudative cases the result has been so brilliant, over and over, that no one can doubt its value. A perfectly fresh preparation of special powder, however, must be used, or the result is a disappointment.

As a prophylactic against blood poisoning after nasal operations I esteem it of value. In these cases I cleanse daily and most thoroughly the mouth, throat, teeth and tonsils, and then direct the patient to keep a tablet in his mouth where it will dissolve slowly.

In la grippe I have used it freely and think it of value as an after tonic.

THE ARTIFICIAL FEEDING OF INFANTS.

BY A. S. EVERETT, A. M., M. D., NEW YORK.

IF we follow nature closely in the feeding of the young, we cannot go very far astray, for after all the nourishment of the offspring of all mammals is a physiological problem which has its origin in impregnation. During the whole period of intra-uterine life, nature is preparing to feed the new creature by the metabolic changes it has initiated and which it is directing in the mammary glands. If the offspring is deprived of this food by the sickness or death of its

mother, and a substitute must be supplied, the nearer the substitute conforms physically and chemically to that prepared by nature, the more perfectly will it nourish the young animal.

The substitute generally used in this country is cow's milk, as it is easily and readily obtained. This being the case, the first point for us to consider in the solution of this problem is, how do cow's milk and mother's milk differ, and what is required to make that of the cow conform physically and chemically with human milk? It must not be forgotten, however, that the milk of one mother does not always agree with the child of another; and that frequently under equally good conditions of health there is a great difference both in the quality and quantity of the milk supplied by the same mother at successive pregnancies. At different periods of lactation, mother's milk not only differs in quantity but in the proportion of its proteids, fats and carbohydrates, and it is not therefore a uniform product. In fact, the analyses of no two chemists agree as to the percentages of its constituents. There exists in the various tissues and fluids of the animal a class of albuminoid substances similar in character and name which, nevertheless, require differentiation. The serum albumin of the blood of one animal is not only foreign to, but may prove a poisonous factor when introduced into the blood of another. There is very little difference, after all, between the blood of an animal and its milk, except in color. From these facts we readily understand why the milk of one mother sometimes disagrees with the child of another, and why the *unmodified milk* of one species of mammals is not only indigestible, but toxic in the digestive tract of another.

The greatest objection to cow's milk is that its casein is more or less likely to form an insoluble mass when acted upon by the gastric juice, while the casein in human milk is, in part, a peptone, and

forms a more delicate coagulum when it comes in contact with the gastric ferments. This reaction of the casein of the cow's milk under the influence of the gastric ferments can be overcome to a great extent by its partial predigestion, and by so coating and separating the granules of the casein that they cannot run together into a hard curd. Cow's milk may be abundantly diluted with water, but it does not change the character of the caseinogen; and the particles of casein will run together and coagulate into a hard, compact lump under the action of the gastric juice.

The simple sterilisation of the milk is not a sufficient modification. It does not change the character or percentages of its chemical constituents. It only destroys developed germs and does not affect the spores. It arrests fermentation, but does not bring the milk back to its normal condition before fermentation took place. The home peptonisation of milk is not only unsatisfactory, but in many instances positively injurious. It was condemned in the most unmistakable terms at the Cincinnati meeting of the American Medical Association. The peptonising should be done by a scientific chemist, and only carried to a point that renders the casein of the cow's milk similar in digestibility to human milk.

The pancreatin should be absolutely pure and the milk perfectly fresh and not more than six hours old. The necessary skill and practice to do this is not possessed by the ordinary mother or nurse. The conveniences for the extemporaneous peptonising of milk is rarely, if ever, to be found in any home. Laboratory modification is very expensive and utterly impossible in the absence of a laboratory. Even with patient and intelligent changing of the formula in the effort to suit the needs of each individual case, I have frequently seen laboratory modifications disagree with the child. I have so often seen this that I am con-

vinced that milk modified in the laboratory is undesirable for many children. The mixture is badly churned by being carted over the rough streets in its delivery. Large oil globules are frequently seen floating on top of the laboratory milk. If these are not fed to the child it loses a part of the fat that was intended for it, and if fed, they are so indigestible that they produce gastric and intestinal disorders. The home modification is such a complex affair that very few doctors are willing to recommend it, and fewer mothers and nurses are willing to follow it. The average physician revolts at working algebraic problems in the nursery. To say the least, home modification is crude and indefinite.

In my experience and practice, Lacto Preparata, when it can be obtained perfectly fresh, meets the nutritive physiological requirements of the infant, prior to the eighth month of infantile life, much better than any other artificial food, or home or laboratory modification of cow's milk; children fed upon it are much better nourished, sleep better, have better teeth, a firmer muscle and are less liable to take infantile diseases.

Lacto Preparata is equal to a modified cow's milk, evaporated to dryness and powdered. The age of the child and the character of its digestion are the main points considered in its preparation. While it is especially adapted to children prior to the seventh month of age, yet it can be used through the whole period of lactation, providing some cereal food is fed to the child in addition. It is so nearly an equivalent for healthy mother's milk that it is a perfect substitute for it. It is a powdered human milk and when mixed with water in such proportions that the mixture will contain 87 or 90 per cent. of water, the liquid is practically identical with healthy mother's milk in color, physical appearance, taste and chemical construction. It contains casein, serum albumin, a body like

lacto protein, together with fat, milk sugar, extractives and potash salts.

I am confident that this food would have been the only infant's food used by the medical profession to-day for the period in which milk is exclusively required by the infant, if it could have been kept perfectly fresh. It is such a pure animal product that this is very difficult to do. Age and the slightest exposure to atmospheric changes destroy it. I learned recently that Mr. Carnrick, the originator, after many costly experiments and much labor, has succeeded perfectly in overcoming this only defect, and it is only just that the medical profession should know of it, for there is certainly no prepared infant's food known that resembles human milk but Lacto Preparata. Under his new formula that prepared fifteen and eighteen months ago is just as fresh and perfect as it was the day it was prepared and sealed.

The vacuum perfection process is now being used in putting it up. This enables them to remove practically all the air from the interior of the jar. They have discarded the tin can and are using the vacuum glass jars. These jars are thoroughly sterilized before using, and

after the food is put into them they are hermetically sealed in the vacuum cylinder. When a jar has once been opened, a little aseptic cotton should be placed in the neck of the jar, and the jar securely closed. This will protect it from atmospheric changes during the time in which it is being used.

After the child is seven months old I would prefer Soluble Food to Lacto Preparata, because it is made to suit the physiological changes which have taken place in the child. At this age we find in the ptyalin and pancreatic juice the ferments fully developed and active which digest cereals, and this is nature's indication that the child requires cereal food in addition to milk.

Soluble Food only differs from Lacto Preparata by the addition of dextrin and soluble starch. It will perfectly nourish the child from the beginning of the seventh month until the end of lactation without the addition of any other cereal food.

These foods, in my experience, bring much better results in the way of infant feeding than any home or laboratory modification of cow's milk, or any other prepared foods.



NEW BOOKS.

A TEXT BOOK OF ANATOMY. By American authors. Edited by FREDERIC HENRY GERRISH, M. D., Professor of Anatomy in the Medical School of Maine, Bowdoin College. Royal octavo; pp. 917. Illustrated with 950 engravings, in black and colors. Lee Bros. & Co., Philadelphia and New York. 1899.

Impelled by the need of a text-book which would present the essential facts of the human structure and omit the unimportant and exceptional, the authors have written this work. They have followed the ordinary divisions of systematic anatomy, varying the method wherever and whenever the subject seemed capable of improvement by such variation.

The introductory chapter is a decided innovation and a capital résumé of very helpful knowledge to the beginner. It begins by defining anatomy and enumerating its various divisions, and then considers in order the names and delineations of surface parts, the systems of organs and their functions, the order of topics, and finally, methods of study.

No student beginning his course of study can fail to appreciate the way in which is presented the difference between the various subdivisions of anatomy, the explanation of many vernacular words, with the parenthetic addition in every instance of the technical term for the same, and wise counsel as to methods of study in which the relative value of diagrams, pictures, models, casts and dissection of the dead body is clearly presented, the aid to be derived from the recitation and from drawing emphasised; and, finally, the indispensability of a good medical dictionary urged. From beginning to end, the chapter is an admirable one, useful alike to teacher and student, and in every way worthy of the pen of that sterling anatomist and excellent teacher, Dr. Gerrish. We trust that it is not impractical to expect that at an early day this chapter may appear in reprint form for more general distri-

bution than will be possible under present conditions.

The chapter upon the elementary tissues and the structure of membranes and glands is in accord with modern histology, as might be expected, but occupying as it does scant forty pages it is necessarily brief in its descriptions. With all deference to the editor we question if the whole subject might not have been properly omitted, belonging as it does in our judgment rather to the domain of physiology than of anatomy. If true of the above chapter, the preceding remarks apply with almost equal force to the succeeding chapter upon embryology, notwithstanding that the subject-matter has been concisely yet clearly expressed and well supplemented with skillfully chosen illustrations.

In the chapters upon the bones and joints are contained the essential facts necessary for the student to know, and are well written. In the paragraphs upon the spine, pelvis, and skull, as a whole, the author might have included with profit some general observations showing the relation of structure to protection against various traumatism, such, for instance, as the use of the spinal curves in diminishing shock, the value of the elastic outer table and the diploë in protecting the brain and its structures, without adding materially to the bulk of the chapters or being inconsistent with the other parts of his text.

The anatomy of the muscles and of the fascia is presented in an admirable way. Beginning with some general considerations upon the subject, including a brief but useful paragraph upon the mechanics of muscular attachments and some helpful remarks upon nomenclature, the author then proceeds to discuss muscles, classifying them into groups upon the basis of their principal action. The descriptive text is excellently supplemented by figures showing the outline and attachment areas of the various important muscles of the body. These illustrations

are, so far as we know, original, and are singularly helpful in giving the reader a general idea of the shape and extent of the muscle depicted.

The circulatory system, including arteries and veins, receives the customary treatment accorded this part of human anatomy. The arteries, in addition to the usual description, are considered in their surgical relations when of sufficient importance to require it. Illustrations showing the artery in relation to adjacent structures and horizontal sections of the extremities at different levels give much additional value to text.

The chapter upon the lymphatic system is illustrated with several original cuts which are sure to help the student in comprehending this little understood but important part of our anatomy. We are glad to note that the term lymphatic "gland" has been discarded in favor of lymph-node.

The treatment accorded the cerebro-spinal axis and the nerves leaves little for criticism. Numerous original illustrations, together with many others judiciously chosen, lighten the student's burden very much in getting a good understanding of this difficult part of human anatomy. We miss from the text any reference to the surgical anatomy of the larger nerves. In our judgment certain nerves at least are entitled to the same kind of consideration as is accorded the larger arteries. Furthermore, to have added a paragraph giving the muscles paralysed by section of a given nerve would have been a feature highly appreciated by the more advanced students and by physicians. This would make

a proper résumé in each instance, and not be inconsistent with the scope and purpose of the book.

The remainder of the work is quite in keeping with that which has been spoken of. The last two chapters are innovations. That upon relational anatomy includes plane sections (mostly after Braune); surface anatomy, consisting of photographs of the arms and legs in various positions, with a key appended in each instance, giving the reader the very kind of information that he usually lacks; photographs of the thorax, neck and back, and lastly, of the skull, in which latter the relations of the principal fissures and of the lower borders of the cerebral hemisphere to the surface of the skull are shown. Finally, are exhibited normal skiagraphs of the trunk, shoulder, elbow, hand, pelvis, hip-joint and surrounding parts, knee and foot, all of which are beautifully clear and correspondingly instructive. The concluding chapter upon practical anatomy contains minute and wholesome advice to those beginning dissection for the first time.

Unstinted as our praise for the authors should be, too much cannot be given the publishers, who by their liberality and skill have produced such a splendid example of book-making. It is not too much to say that the lavish number and perfection of the illustrations add fifty per cent. to the value of the book. It is a safe prediction that it will be the most highly prized text-book of anatomy yet produced.

JOHN PARMENTER.



THE EDITOR'S DESK

THE AMERICAN MEDICAL QUARTERLY.

In view of the large number of journals already before the medical public, it is meet and proper that the appearance of a new medical magazine should be accompanied with some reason for its creation and an enunciation of its purposes.

The advance in all departments of medical science during the last decade of the nineteenth century is unprecedented in the history of our profession. The multiplicity of medical societies and the enormous increase in medical literature are but the sequence of progress, and constitute the vehicles for disseminating knowledge among the members of the most active and progressive of all the professions. The medical newspapers, the great weeklies and monthlies, have a field all their own, in the tilling of which this magazine does not contemplate competition. The hasty report for immediate publication of papers read under the ten-minutes' rule is required in these modern days of electrical rapidity, but for thorough information and precision in knowledge, deliberation and painstaking study are quite as essential as in any previous scientific era. This magazine will appear quarterly; it will publish papers of scientific and practical value; it will submit to its readers reviews of books and articles upon selected topics by eminent authors, with names signed in every instance; and will be conducted in all its departments along the lines established by the highest standard of scientific inquiry. It will have no office and will attempt no function beyond the diffusion of advanced knowledge in all departments of medical science; and it will be its special province to furnish its readers practical rather than experimental or theoretical contributions from the front ranks of the profession.

CHRISTIAN SCIENCE AND LAW.

A healthy moral tone supporting the existing statutes is far better than to attempt any alteration in the same, as there is already sufficient groundwork on which to suppress all attempts at quackery or charlatanism. The forcefulness of a statute depends largely upon its interpretation, and if the people are aroused to the dangers that come to them because of methods which obtain at the present time, existing statutes are all-sufficient to punish malefactors. The moment laws are put upon the statute books which define more clearly than do the existing ones a method for punishing christian scientists and other healers, that moment the charge of persecution will be lodged against the profession of medicine and against the district attorneys as prosecuting officers. These people flourish under persecution. It is the history of the world that where men and women are punished because of giving expression to opinions or attempting to advise morally (?) as to methods of prolonging life of body as well as of soul, a large part of the public considers them much abused.

"By their deeds ye shall know them," and by the evil effects that follow the attempts at cure in cases such as have been recently cited in the newspapers, and which have attracted the attention of the public as well as of the state and local officials, more good is done than by any prosecution under specific statutes. There is no decision confirmed by the highest courts in the land which defines "the practice of medicine," each state being left to determine this matter for itself, and that, for instance, has been the difficulty in the past and will be the difficulty in the future in regulating the practice of midwifery, unless midwives themselves are regularly licensed by the State to do this work, and others are prevented from practising this branch of physiologic medicine.

Homeopathy today would not be a factor in medicine had it not been for the fact that the criticism of its followers was regarded as persecution, for the American public will not submit to procedures which are based on bigotry and so-called medical ethics. If the profession of fifty or a hundred years ago had acknowledged the truth of some of the conten-

tions of Hahnemann's followers, namely, that the drugs administered in those days were nauseating and in many cases deleterious and frequently administered in too large doses, whatever good there was and is in homeopathy would then, as it is today, have been incorporated in the teaching of medical students.

If we now commence procedures against men and women who honestly believe that they can be cured of bodily ills by faith, we will antagonise an element which will be strengthened by reason of such prosecution. The public can be safely left to judge as to the merits of the methods of their attempted cures. Attempted suicide is a crime in the State of New York today; homicide is equally so. The person who believes in mental or christian science as a means of relieving bodily ills and who becomes the patient of a healer whose methods are those of prayer, is equally guilty with this style of practitioner of medicine, and it is our belief that no law can be successfully put in force which would punish either one of the parties. If President Murphy, of the New York Board of Health, and others occupying similar positions will, as these cases are reported in the public prints, expose the fallacy of the methods which these misguided folk employ, it will do far more toward changing the opinions of people as to the merits of such procedure than could any law or hundreds of laws which might be enacted by legislatures.

A situation which requires such an expression of opinion is a sad one, but it is because of the lack of education or rather because of the perverted education of some of the citizens of our country. There has hardly been a decade in the written history of the world when healers, divine curers and magician physicians have not held sway. There have been waves of hysteria of this kind which have animated the people, recurring at varying intervals ever since the year one. Various causes have been assigned to this peculiar manifestation of a mental process which in most instances had religious fervor for its foundation, and the world has been repeatedly astounded at the publication of the wonderful powers possessed by these healers. The common sense of the public, however, comes to prevail in the long run, and superstition and awe give way to reason. It is a sociologic question more than a medical one, a question of morals more than of law, and we would oppose any procedure which would bring about a legal prosecution based on the theory

that religious thought and action should be interfered with.

There are many truly good people who believe in christian science (which has been described as a misnomer because it is not Christian and because it is not science); they would feel themselves persecuted were the law to attempt to curtail their rights in this manner. Those who would prosecute them would do so on the theory that the greatest public good would be served by lessening the field of their usefulness, but, as previously stated, it would be looked upon by the disinterested and the uneducated as well as by members of such a sect or creed as an interference with their religious methods, and in the end would do more harm than good.

The present medical laws in our view should not be amended excepting after careful review by doctors and lawyers, and then simply on lines which will prevent a person practising as a doctor of medicine without having received the sanction of the State, by virtue of having passed the medical licensing examination prescribed in the commonwealth wherein he or she resides.

CONTRACT SURGEONS IN THE ARMY.

An effort will be made when Congress meets to have regulated the standing of contract surgeons in the army, and the movement should have the support of every physician.

As it stands now, contract surgeons are given a contract to perform the services of medical officers. They receive pay at the rate of \$1,800 a year. During the recent war a special order, issued by the Secretary of War, gave them the relative rank of first lieutenant, and they were allowed to wear a regulation uniform, but all collar devices—the "U. S." and the cross, and the shoulder straps—were of silver instead of gold. This was a distinguishing mark. The contract surgeons were of a class by themselves. They were not volunteers; they were not regulars; they were just "contracts," and received the courtesies which their position demanded, and nothing more. There was, generally speaking, a tendency to look down upon them as "only contracts." Yet, strange as it may seem, the regular soldier—the man behind the gun—sought the services of a contract surgeon whenever he could, for, as a rule, they were men who had had wide experience and had left practice to go into service.

The condition which Congress will be asked to correct bears only on the standing of contract surgeons. The working records they

have made are a credit to the profession and to themselves and to the Surgeon-General who selected them.

As it is now, a contract surgeon may be injured so badly as to be disabled for a long period, possibly for life. Under the circumstances his contract would be annulled, and he would be without resource, for he is not entitled to retirement pay for disability. If he were killed in action or died of disease, his widow would not be entitled to a pension. Of course, it may be argued that Congress could pass a special relief bill. Congress can do anything, but relief bills are notoriously slow.

Just what form the action of Congress will take is not definitely known, but it is more than likely that it will be in the nature of an act providing that when a contract is made by the Surgeon-General with a surgeon, he shall be regularly commissioned an acting assistant surgeon, with the full rank of a first lieutenant, and be entitled to all the rights and privileges which such a commission carries with it, the commission to be vacated by annulment of the contract. By this means, the physicians who serve the government in times of emergency would occupy an established position, the profession would not be lowered in the slightest degree in any one's eyes, and the government would still be able to dispense with the services of such extra surgeons when even it was apparent that they were no longer needed.

THE MEDICAL MEETINGS AT COLUMBUS.

The spring meetings of medical societies are at their very height as we write, and will culminate at Columbus, Ohio, early in June. There the American Medical Association will hold its fiftieth annual meeting, speaking numerically, although it is fifty-two years since it was founded, the apparent discrepancy being accounted for by the fact that during the civil war two annual meetings were omitted.

This association is the most popular medical organization in the land, since its membership is practically unlimited, and every reputable physician in the United States may attend its meetings and participate in its proceedings. This being the fact, it seems a little odd to the casual observer that the Medical Society of the State of New York, admittedly one of the best of our state medical societies, should be debarred from official representation in the national body, by reason of a mere theoretical difference regarding the code of ethics. We say theoretic, because

practically there is no difference in the professional or ethical conduct of medical gentlemen in any part of our country, or anywhere in the world. Therefore, we hope this small and inconsequential difference will be soon healed; we are very sure it can be if the right spirit is manifested among the leaders.

There will be held at Columbus several other meetings about the same time as the principal one, among the most important of which is that of the American Academy of Medicine. The members of this body are the holders of university degrees or their equivalent. This organization deals chiefly with questions pertaining to medical sociology—the highest order of ethics. It needs no "code" for its guidance, and its influences are ever growing wider and wider with advancing years.

Its program for the current meeting is one of the best we have ever seen. It is unique in its make-up, and is artistic in its design. Besides the questions for debate are interesting, and, for the most part, will be presented by men entitled to be heard from the chair. We are pleased to note that medical advertising, in its various phases, is listed for discussion, and we hope this subject will receive the attention its importance merits. It is the one instance in which the code of ethics is violated with greater impunity than in almost any other, and the offenders defy all restraint.

The other societies—the Medical College Association and the National Conference of State Examining Boards—that meet simultaneously with the first-named bodies, have each marked out important lines for their proceedings, and we trust that much good to the cause of higher medical education will result. On every hand the indications are auspicious for the advance of medical society work, and for the improvement of the status of the medical profession as a direct result of this influence.

THUMB-NAIL SKETCHES.

One of the best known of the old practitioners in the South is Dr. James B. McCaw, of Richmond, Va., who for half a century has been in active practice. Nearly all this time he has been prominently identified with the Medical College of Virginia, at Richmond. For many years he was professor of the principles and practice of medicine. At the present time he is president of the board of visitors.

Dr. McCaw, during his professorship, was famous for the practical character of his lec-

tures, the ease and grace of his language, and his quiet, elegant delivery.

During the war there was a great hospital established in Richmond; it was the largest military hospital ever erected. Over 70,000 cases were treated there alone. Dr. McCaw was chief surgeon of this hospital and in sole charge of it during its existence. Standing six feet two inches, erect and



strong. Dr. McCaw looks very much younger than he is. He does little now in the way of literary work, although in the early days of his practice he was a most prolific writer on scientific subjects, and was at one time owner and editor of two journals.

Dr. McCaw comes of a family of medical men. His great-grandfather was Dr. James McCaw, who was on the staff of Lord Dunsmore, last colonial Governor of Virginia; and later was on the staff of Sir Henry Clinton. Dr. James McCaw's son, James D., was indentured to John Bell, of Edinburgh, and his original indenture papers are in the possession of the family in Richmond. James D. McCaw came to this country after serving his time with Bell, and settled in Richmond. His son, William R. McCaw, was a well known practitioner in Richmond. Dr. William McCaw's son is Dr. James B. McCaw, who is now rounding out a busy life spent in the practice of medicine, in Richmond—a tall, courtly gentleman of the old school. He has given to the profession another member, Dr. Walter D. McCaw, who is a surgeon in the United States Army.

Dr. L. S. McMurtry, of Louisville, Ky., is one of the best known surgeons in the Blue

Grass State. He is a serious-appearing, genial, companionable man, deeply in earnest in everything he does. His chief work is abdominal surgery, and his reputation in this respect is not confined within the borders of Ken-



tucky, in which State he was born. He has all that courtesy and gentle breeding of the native Kentuckian.

In literature and debate he has a widespread reputation. His literary work is marked by an attention to detail and a delicate finish which is too rarely seen in the rush of writing today. As a debater he is well equipped, and his well-rounded sentences are marvels of construction and graceful rhetoric.

His administrative ability is strikingly illustrated in hospital management, both public and private.

In an educational way, Dr. McMurtry is prominent. He is professor of gynecology and president of the faculty of the Medical School of the Central University of Kentucky, and gynecologist to Sts. Mary and Elizabeth Hospital. He has membership in several of the foreign societies of gynecologists and obstetricians.

One of the best known and most popular members of the American Medical Association is Dr. Charles A. L. Reed, of Cincinnati, one of the cheeriest and most companionable of men, and a prince of impromptu speakers. No matter how sudden the summons, or what the subject, his talk is always interesting, his rhetoric faultless, and his delivery graceful and easy.



Dr. Reed is a gynecologist, a brilliant operator and a ready diagnostician. In spite of the demands made upon him by his practice, which is a very large one, he has found time to contribute much valuable material to gynecological literature, and to occupy prominent positions in associations. In 1893 he was Secretary-General of the Pan-American Medical Congress, and is now Secretary of the Pan-American Committee which has full authority to act between the meetings of the Congress.

Dr. Reed is professor of gynecology and abdominal surgery in the Cincinnati College of Medicine and Surgery, and in the Woman's Medical College of Cincinnati; surgeon to the Cincinnati Free Surgical Hospital for Women. In 1898 he was president of the American Association of Obstetricians and Gynecologists.

The name of Park is familiar to the profession the world over as representing one of the foremost surgeons of the time.

Roswell Park was graduated from the Chicago Northwestern Medical College in 1876

Fifteen years ago he settled in Buffalo and is at present professor of surgery in the Medical Department of the University of Buffalo, and



attending surgeon to the Buffalo General Hospital. His has been a busy life, yet he has managed to find time to make valuable contributions to scientific literature. His "History of Medicine" is the most complete epitome

in existence. "Park's System of Surgery by American Authors" was published about a year ago, and almost immediately became a recognised authority on surgical matters, especial attention being paid in it to tumors and surgical pathology.

In personal appearance Dr. Park is tall, probably 5 feet 11 inches, and built on sturdy lines. He is the embodiment of confidence and coolness. Every line, physical and facial, denotes an unusual degree of strength and earnestness of purpose.

His mustache is short and stubby and reddish-brown in color. Personally he is most agreeable under all circumstances, and his adaptability to surroundings is most gracious. He is an ambidextrous operator and his resources are unlimited.

As an expert on tumors and tumor formations, Park stands without a peer. The chapters on tumors in his work on surgery are

among the best and most comprehensive contributions to tumor literature.

Last year the State of New York appropriated a sum of money for the establishment of a State pathological laboratory for the study of cancer, and Dr. Park was appointed director. Under his personal supervision the work of investigation has been carried on in every direction, and there is every indication that in a comparatively short time he will be in a position to make some positive statements regarding the causes of cancer. The laboratory is one of the most complete in this country, and already experimental inoculation has produced some remarkable results.

Dr. Park has received an honorary degree of M. D. from Rush Medical College, and an honorary A. M. from Harvard University.

The necessity of closing the forms, in order to publish the edition of the *QUARTERLY* with promptitude, prevents the appearance in its columns of several important contributions. In early numbers we shall present papers from Dr. Abraham Jacobi, Surgeon-General George M. Sternberg, Dr. Roswell Park, Dr. L. S. McMurtry, Dr. J. B. Murphy, Dr. Edward N. Brush, Dr. James F. W. Ross, Dr. William H. Thompson, Dr. Clinton Cushing, Dr. Edward J. Ill, Dr. William E. B. Davis, Dr. Charles G. Stockton, Dr. George Ben Johnston, Dr. Joseph Price, and other writers of distinction. The next number will be issued early in September. Books for review should reach the editor not later than July 15.



ABSTRACTS.

A STRIKING CONFIRMATION OF THE THESIS

- Promulgated by DR. LAUDER BRUNTON in Respect of the Interdependence of Chemical Constitution and Physiological Action.

THE MEDICAL PRESS, London, Eng., Feb. 22, 1899.

"Phenalgin is an ammoniated, synthetic, coal-tar product, manufactured by the Etna Chemical Company, of New York. Technically described as belonging to the amidobenzene series. It presents itself in the form of a white powder, with a characteristic ammoniacal odor. It has but a faint taste, and is consequently not disagreeable to take. It differs from most of the analgesics in that it exerts a stimulating effect on the heart. In doses of ten grains and upward a sedative effect is produced, in addition to its unquestionable analgesic actions on the sensory apparatus of the nervous system. These various actions are precisely those which a consideration of the chemical constitution of phenalgin would lead one to expect, and this is a striking confirmation of the truth of the thesis promulgated some years since by Dr. Lauder Brunton in respect of the interdependence of chemical constitution and physiological action. The stimulating effect of the ammonia constituent is first perceived, and this is soon followed by a soothing sensation due to the gradual subsidence of the painful manifestations. Phenalgin appears to be an ideal agent for the relief of insomnia associated with neuralgic or rheumatic distress. Similarly, in dysmenorrhea, not dependent upon obvious organic lesions, phenalgin procures prompt disappearance of the pelvic misery. Like most drugs belonging to this series it is possessed of antipyretic properties and, as already stated, it has hypnotic as well as anodyne properties which enable it, in certain cases, to take the place of opiates, the use of which is attended by such marked gastro-intestinal disturbance."

DANGER IN UNCLEAN NURSING BOTTLES.

At all times of the year, but especially in hot weather, unclean nursing bottles are the cause of much bowel trouble and many fatalities among infants. This danger cannot be too carefully guarded against; and the nursing bottle that can be *thoroughly cleansed* is to be preferred above all others. A bottle with an opening in the lower end that will allow a stream of water from a faucet to run through it, can certainly be thoroughly cleansed. "The Best" Nurser is such a bottle; and as the air-inlet in the lower end of the bottle admits air *back of the food* as fast as the food is drawn out, the nipple cannot collapse, thus preventing wind-colic. Thousands of physicians have testified to the great merit of "The Best" Nurser.

ON THE ARTIFICIAL FEEDING OF INFANTS.

By JOSEPH I. SMITH, M. D., PHILADELPHIA, PA.,

Instructor of Clinical Medicine in the Philadelphia Polyclinic; Assistant in the Nose, Throat and Ear Clinic in the Howard Hospital.

No one will challenge the statement that the matter of the artificial feeding of infants is second to none in importance. The stationary population of France has been attributed to the defective feeding of French babies by artificial foods. When a mother will not or cannot nurse her own child it is not only a question of life and death for her offspring depending upon how it is fed, but it is also a graver question, for to the community in which the child is to grow up it is better that a child should die than that it should grow up a charge or a danger to that community.

A food that will do for a child at one age is not always suitable at another. The mere lessening of the amount of water used with a given quantity, only serves to strengthen it, but it also does not alter the proportions, and this is the important point. It is necessary to have foods so varied in composition as to be suitable to the different stages of development of the child's digestive organs. It will, I trust, be of interest to other practitioners to learn that such a series of foods can be had, and that they may be readily prepared. These foods have been very successful in my hands. I will relate a few cases that speak for themselves, after which I shall draw several conclusions.

Case 1.—Male, four weeks of age, refused to nurse at the breast, was peevish and crying most of the time, and his bowels were constipated. I gave him the No. 1 Allen & Hanburys' prepared mother's milk, and in a few days saw a favorable change in him. He appeared to be satisfied with each feeding, his bowels became regular, he slept well, did not cry upon awaking as usual, and he gained in weight and in color.

Case 2.—Female, nine months of age (premature birth at eighth month), a weak, puny child, could not sit up in a high chair; took no notice of her surroundings; was never known to laugh; did not weigh more than 12 pounds, and at this time did not play with anything given to her. She never appeared to be hungry, but took her food mechanically. She had been using condensed milk since birth. In fact, she was in such a condition that, her mother says, she was not expected to live. I put her upon Allen & Hanburys' No. 3 (malted) infant food. I saw her ten days afterward, and was very much pleased with the change. At the present time, one month after beginning the food, she has four teeth, is much brighter, laughs and plays with her sister, cries when hungry, sleeps well, her bowels are regular and, the mother tells me, she has gained considerably in weight.

Case 3.—Male, twelve weeks of age, born at term, and had been on a well-known proprietary food, but without thriving as he should have done. He had considerable colic during the night, would awaken with a crying spell every two or three hours through the night, would pass large lumps with each movement of the bowels, and was rather constipated. After feeding, he would vomit, and the food did not satisfy him, for he would cry again as soon as the bottle was emptied. After having had the other successes with the Allen & Hanburys' Nos. 1 and 3, I concluded to put him upon the No. 2, and it agreed with him. His bowels became regular and softer, he slept between five and six hours during the night (a great item to the parents), the attacks of colic were fewer and milder, and he gained two pounds in three weeks.

My experience has satisfied me that the Allen & Hanburys food has three advantages not found together in any other food. They are:

First—It is graded in series, which makes it superior to all other foods.

Second—It is readily prepared, which is an advantage to the busy mother, and requires the addition of nothing but water for the first and second grades.

Third—It does not constipate, and the tendency to have colic is lessened, and, in my experience, the infants did not vomit after taking it.

1648 North Eighth St.

ANALYTICAL TEST.

I have used Neurosine, prepared by the Dios Chemical Company, of St. Louis, in my practice for a number of years in hundreds of cases where the bromides are indicated, with marked success. The preparation has always been uniform and is in my opinion the best combination of bromides on the market. On request, I have made a chemical analysis of this preparation and can state conscientiously that it is entirely free of opium, morphine and chloral.—CARL ORTH, PH. G., M.D., Analytical Chemist, 1437 Penrose street, St. Louis.

SYR: HYPOPHOS: FELLOWS.

(Dispensed in bottles containing 20 oz. by weight, or about 15 oz. by measure.)

Mr. Fellows takes this opportunity to thank the profession for their increased recognition of his invention.

To the medical gentlemen who have kindly permitted the publication of their testimony in favor of his Hypophosphites, and who, by letter or otherwise, have expressed their disapproval of the fraudulent imitations, he is especially grateful.

With its increasing favor there has been a corresponding increase of imitations, and though this is a compliment in the sense that "only the best things are worth counterfeiting," yet Mr. Fellows would respectfully request the profession to guard against the misleading advertisements and fictitious compounds of notorious imitators.

SAFEGUARDS AGAINST SUBSTITUTION.—Fellows' Hypophosphites is dispensed in bottles

containing 15 oz. by measure—the address, Fellows & Co., St. John, N. B., blown on—the name, J. I. Fellows, St. John, N. B., in watermark upon the yellow wrapper; it is hermetically corked and sealed with crimson capping; is heavy, slightly alkaline, has a pleasantly bitter taste, and deposits a flocculent brown precipitate of Hypophosphite of Manganese when left undisturbed for forty-eight hours.

Note.—Though this precipitate mars the appearance, its presence has been found imperative to its full remedial effect.

DEFECTIVE ELIMINATION.

Defective elimination is without doubt the cause of a large number of diseases.

Usually when the kidneys fail to do their work the skin comes to the rescue and *vice versa*. Occasionally, when both are derelict, the bowels may help, but to a small extent only. Again, all the excretory organs may be ready, able and willing to perform their functions, but there is an emunctory at fault, which has become gorged and fails to carry to the "main" that waste product over which it exercises particular care, causing an interruption of metabolism. As a result there is an attack of a rheumatic or neuralgic character.

Tongaline, on account of its extraordinary eliminative properties, especially when administered with copious draughts of pure water, hot preferred, flushes the emunctories, thoroughly removes the obstructions and promptly restores normal conditions.

FAMILIAR CLINICAL PICTURE.

One of the most common class of cases is that in which there are no well defined characteristic symptoms of organic disease, but in which there are disturbances of practically all the functions of the body. This condition is variously termed general debility, malnutrition, general atony, etc. The symptom-group is an exceedingly complex and varied one, but the most striking disturbances are those connected with the process of metabolism; the patient is unable to replace by food the active waste occasioned by the physiologic functions. In consequence of this, nutrition suffers, vital force becomes diminished and there is functional disturbance of practically all the organs of the body. The stomach and the processes of digestion become particularly enfeebled and as a consequence there arise the symptoms of atonic dyspepsia, with lack of appetite and inability of the digestive organs to prepare the food for assimilation. The patient's vital powers are at a low ebb and nature's method of recuperation, that is, by assimilation of food, is effectually inhibited by inability of the organs to furnish the required properly prepared nourishment. Every physician has many times realized the absolute uselessness in these cases of the ordinarily employed tonics, iron, arsenic and strychnine. It is soon apparent that the remedies are either not absorbed or, if they do enter the system, they fail absolutely to re-establish the proper ratio of metabolic waste and repair. It is now universally conceded by authorities that the first requisite

in the treatment of this class of cases is to foster the patient's nutritive functions so that food will become assimilated and thus restore wasted tissue and impaired vital forces. The stomach is the organ of prime importance and its normal functional activity must be re-established by remedies which have a direct tonic alterative and stimulant influence upon its enfeebled, inactive mucous membrane. Stomachics—gentian, taraxacum, phosphoric acid, etc.—are the agents of most service. When, however, these stomachics are combined in a certain manner with a remedy which, according to the highest medical authorities, is the best promoter of assimilation, the indications for treatment are completely met. Gray's Glycerine Tonic Comp. combats malnutrition upon the most rational scientific basis, that is, it re-establishes normal nutritive processes by its stimulant and alterative influence upon the digestive organs and also furnishes the wherewithal—glycerin—to cause the assimilation of food and medicines. It gives nature the needed chance to resume its normal work of repairing exhausted vitality and wasted tissue. While primarily a stomachic Gray's Glycerin Tonic Comp. is of greatest value in all conditions of systemic depression or exhaustion occurring either independently or as a consequence of severe organic diseases, such as tuberculosis, Bright's disease, etc. It antagonizes depression by propping the natural functions of the body, by engendering appetite and ensuring the absorption and assimilation of food—nature's method of repairing waste. THE PURDUE FREDERICK CO., 15 Murray street, New York.

TUBERCULAR INVASION OF THE SUB-MAXILLARY AND CERVICAL GLANDS—ASEPTIC CLEANLINESS—LYMPHATIC TEMPERAMENT OR SCROFULOUS HABIT.

(From one of PROF. B. S. ARNULPHY'S Clinics, Chicago, Ill.)

"We have seen of late quite a number of cases of tubercular invasion of the glands of the sub-maxillary and cervical regions, with or without concomitant or subsequent infection of the lungs. Two of these cases, in which the glandular development was quite marked and widespread, threatening to extend downward into the thoracic cavity, have been operated upon by Prof. Shears, as you know, and with complete success. The others are under medical treatment, and report progress. Now, when we bear in mind how uncertain are the ultimate results of internal therapeutics in cases of this description, we should industriously keep at work and teach our patients and our friends around us that the best and easiest way to cope with these insidious troubles is to prevent them. We know beyond a doubt that in most cases of tubercular infection of the cervical glands the door of entrance of the infectious agent is through the mucous membrane of the mouth and of the pharynx. Therefore, any simple and practical method whereby we may ensure a sufficient degree of aseptic cleanliness of these surfaces,

thus barring the paths leading to the glandular structures, will be of invaluable assistance.

"Many preparations are to be found on the market which one and all put forth far-reaching claims, but the one I use and recommend is the Glyco-Thymoline of Kress & Owen, of New York. It is an excellent preparation, in which the constituent ingredients are very intelligently combined, resulting in a pleasantly flavored, alkaline, non-irritant, efficiently cleansing and antiseptic solution, which soon becomes a standby with all practitioners acquainted with it. I advise all predisposed persons of lymphatic temperament, or scrofulous habit, to use a mouth-wash, consisting of one-third of Glyco-Thymoline and two-thirds of warm water, at least once a day. The protection thus afforded is invaluable."—*The Clinique*, Sept. 15, 1897.

ABSTRACT FROM "THE CAUSATION AND TREATMENT OF CONSUMPTION."

(By JOHN R. KESTELL, PH. C., M. D., Detroit, Mich., read before the Wayne County Medical Society.)

I have little faith in specifics in the treatment of tuberculosis. I believe it is entirely a disease of malnutrition, as a result of defective elimination, and all therapeutic measures must be directed toward the improvement of the digestion and assimilation. Consequently, I am explicit in my instructions as to diet, forbidding absolutely the use of alcohol, syrups, potatoes in any form, pork, veal and all such dishes as are difficult of digestion and prone to fermentation. In many of these cases of alimentation I have found it beneficial to give some good diastasic extract of malt, that known as Maltine proving most satisfactory for the reason that it is the only malt extract known to me which gives generous proportions of nitrogenous and phosphatic matter, with a proper proportion of carbohydrates; being made, as it is, from wheat and oats, in conjunction with barley, instead of barley alone. Tonics, stimulating the nervous system and digestive organs and assisting in the reconstruction of blood and tissue, are important. Stimulating baths may be used with good results. It is, in my opinion, a mistake to overwhelm the body with frequent injections of indetermined animal serum, thereby producing either a severe reaction or possible accumulative toxemia.

EXAMPLES OF PHARMACEUTICAL SKILL.

William R. Warner & Co., of Philadelphia, New York and Chicago, have an array of remedies listed on their four pages of this issue that will no doubt command the attention of physicians at large. Each one that is mentioned is a remedy to be employed in one or another of the more common diseases met in every-day practice. Most of them are so well known to the profession, it would almost seem superfluous to again mention them, but we presume that Messrs. Warner & Co. know their preparations to be so efficacious,

being compounded of the purest constituents, that they take four pages with us in the belief that "a good thing bears repeating."

Messrs. Warner & Co. claim to have the largest pill factory in the world. The "Warner" pill claims as its points of merit that, "being made by a special process, they give the highest possible therapeutic effect of a prescribed remedy. This process preserves the activity of ingredients until ingested, when they are released with full therapeutic value. For uniform results specify 'Warner!'" And the actual results of using Warner's soluble pills bear out the claims of the manufacturers, for they (the pills) have been prescribed with uniform success for over forty years by the medical profession. As has been aptly said, the name "Warner" has almost become a synonym in medicine for purity, accuracy and efficacy.

CLEVELAND, Ohio, Nov. 14, 1898.

During the past winter and spring a number of prominent druggists of this city formed a class to study under my instruction the volumetric solutions of the U. S. P. of '90. A large number of chemicals were examined, in every case samples were taken from shelf bottles in actual use, and not in a single case were samples purchased intentionally for examination.

Among the articles investigated was solution of Hydrogen Dioxid. Most of the samples brought in were of Oakland Hydrogen Dioxid, showing the popularity of this brand in Cleveland. The articles were examined in strict accordance with the Pharmacopeia's direction and the results were as follows:

2	Samples of Oakland H ₂ O ₂ tested	- 3.2%
1	" " " " " "	- 3. "
1	" " " " " "	- 2.85% (Six Months in stock,)
1	" " " " " "	- 2.1%
1	" " " " " "	- 1.2%

Oakland Hydrogen Dioxid certainly deserves the preference shown for it by druggists in Cleveland.—JOSEPH FEIL, PH. C., Prof. Chemistry and Physics, Cleveland School of Pharmacy.

PURE GLUTEN FOODS.

Aided by all the modern milling facilities and profiting by their many years of experience in the manufacture of health food products, the New York Gluten and Phosphate Food Co. have succeeded, after a long series of careful experiments, in producing an absolutely pure Gluten, from which they make a superior quality of Gluten Bread, Crackers, Breakfast Health Food, Plain and Self-Raising Gluten Flour.

Considering the fact that ordinary wheat flour contains but about 16 per cent. of Gluten, it can be readily appreciated that the separation of this Gluten from the Starch without injuring the nature of the Gluten itself, is a long, tedious and necessarily expensive process. Their process is strictly a mechanical one, as no chemicals of any kind are used. As a result of months of experimenting, we now unqualifiedly make the statement that

their Gluten Bread, Crackers, Breakfast Health Food and Flour are absolutely the purest, best and most scientifically prepared articles of the kind in the world, and you can verify this statement, as they offer to submit samples to physicians for analysis.

The attention of the medical profession is particularly directed to the merits of Antithermoline, an article now coming into very general use among many leading practitioners, the announcement of which will be found elsewhere.

Antithermoline does away with the use of blisters, counter-irritants and poultices. The old-style poultice had many objections; it was a favorable culture for bacteria, and, being saturated with water, it was not in a condition to remove exudates from the engorged capillaries. It became cold quickly, adhered to the skin and needed frequent renewing.

Antithermoline is antiseptic, and contains no fermenting substances or water, and is strongly hygroscopic, hence it does not dry out quickly and can be left on for one or two days. Its strong affinity for water enables it to extract exudates rapidly, thus relieving the pain and tension, while its soothing and healing properties are absorbed by the tissues and a very rapid subsidence of the inflammation results.

A very liberal offer is made by Messrs. G. W. Carnrick & Co. to send a quantity for trial on payment of cost of carriage.

SCOTT'S EMULSION VINDICATED.

The medical profession and the trade have for the past year and a half been much interested in the fight between Messrs. Scott & Bowne, manufacturers of Scott's Emulsion, and the State Dairy and Food Commissioner of Ohio. The trouble arose from the charges made by the Ohio Food Commissioner that Scott's Emulsion contained a narcotic, and made it a misdemeanor to offer it for sale without the regulation poison label.

Messrs. Scott & Bowne, feeling it a duty which they owed to the profession in general, as well as to themselves, repudiated the charges in every instance, and since then the matter has been a subject for the courts to decide.

The suit brought by the Commissioner against a druggist of Cincinnati for selling Scott's Emulsion, which he claimed contained morphine, was settled this week in the courts at Cincinnati by a verdict for the defendants, entirely vindicating them, and showing the injustice of these injurious attacks upon Scott's Emulsion, the jury being out but a very few moments.

The testimony brought out at the trial was overwhelmingly in favor of the claims of the manufacturers that Scott's Emulsion had never contained a narcotic of any kind. More than a score of the best chemists in the country certified to these facts.

We congratulate Messrs. Scott & Bowne on their victory. It is the old story: "Truth crushed to earth will rise again."

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FUNCTIONAL CARDIAC MURMURS.

By A. JACOBI, M. D., LL. D.,

New York.

ORGANIC cardiac murmurs have always been distinguished from the accidental and the functional. It is self-understood that the first named are caused by actual, mainly valvular, disease, and will remain as permanent as the anatomical changes which produce them. Accidental¹ murmurs should be called those which, though they appear to be cardiac, do not result from actual cardiac disorder. They may even be extra-cardial, and sometimes require great attention and repeated examination before their true character can be ascertained. They depend on adhesions between the pleura and pericardium, with or without those between the two pericardial layers; are not transmitted through the blood-current, not always rhythmical, not quite synchronous with the contractions of the heart, and not of equal strength and audibility.

¹ Dr. George W. Webster, of Chicago, in a paper read before the American Medical Association of 1899, proposes to do away with the discrimination of "accidental" and "functional" murmurs and to employ the former adjective exclusively. He claims that "it commits us to no theory of causation, indicates no pathology, and avoids a discussion of the question whether functional disturbances occur with pathological changes." But it is exactly this discussion which is urgently required. Without it the difficulties surrounding the etiology and nature of inorganic murmurs will not be overcome.

Some, according to their origin, are superficial, some distant, grating (pericardial) or soft (pulmonary), increase during expiration, and may stop altogether when breathing is intermitted. They are seldom heard posteriorly.

Changes in the shape of the chest-wall, such as annoy the heart, alter the character of the cardiac sounds. In three cases of rhachitical infraction of ribs Hochsinger observed distinct cardiac murmurs; Steffen the same in the common forms of rhachitical deformities of the chest. These forty years I had many opportunities of publicly demonstrating, with or without apparent hypertrophies of the heart, more or less marked cardiac murmurs attributable to the triangular or quadrangular shape of the rhachitical thorax, the walls of which, being no longer elliptical, touch a larger surface of the heart. These murmurs are not always the same. Within a few minutes the well-marked cardiac murmur of a baby sitting erect or bent forward may change into a muffled sound when the patient lies down—the best proof of its resulting from the mechanical annoyance on the part of the chest-wall. Indeed, this muffled sound and the murmur differ only in degree. The former may

often be produced by the pressure of the stethoscope on the flexible ribs of the young. Such observations, as noticed by Henoeh, and also by Hochsinger, who, however, speaks of a coarse heart-sound only, may readily be verified, provided the age of the patient is taken into account. They will be the more positive the younger the baby and the more flexible the ribs. Now and then the cardiac sound may be changed by pressure over the pulmonary artery.

"Functional" should be called all those murmurs which cannot be explained by any anatomical alteration of a valve or of the myocardium. The causes, however, which are responsible for the exhibition of functional murmurs are altogether too numerous. To say that no single theory explains their etiology is not doing justice to the case. Indeed, there are but few conditions of the heart and blood-vessels to which "functional murmurs" are not traced back. Thus the imagination, or the diagnostic skill,—or its absence,—of the writer had always a great deal to do with their alleged nosogeny. Protracted diseases and convalescences, losses and abnormal conditions of the blood, all forms of anemia, chorea, poisoning by alkalis or by acids, acute intoxications and long-continued eruptive fevers, septic processes, irregular contractions of the myocardium, degeneration of papillary muscles, minute disturbances of valves or of bloodvessels, chronic myocarditis, fatty degeneration, are all charged with causing "functional" murmurs. Nervous influences also come in for their share. Undoubtedly, strong emotions, excitement, mainly in the young and those very impressible, influence the heart in the most various ways, from temporary palpitation to change of structure. Prolonged emotional strain certainly has that effect, even to the extent as to cause distention, dilatation and hypertrophy, through prevention of complete systolic discharge equally with

physical over-exertion. Before and after violent exercises of athletes Schott could discover under the Röntgen rays the different degrees of distention. This momentary distention when exertion is demanded of an enfeebled heart, though otherwise healthy (for instance, in chlorosis), will lead to persistent dilatation. When the heart is no longer healthy, however, for instance, after infectious diseases, or in fatty degeneration, or in the various degrees of other myocardial changes, both distention and dilatation are more readily established. Nor are pathological alterations required to facilitate their development; for here fatigue, physical, emotional, or mental, renders muscles more flaccid and favors distention. As far as the heart is concerned, its muscular labor depends, moreover, even on the amount of support it finds in neighboring organs. The inability of lying on the left side, which is experienced by most healthy people, is caused in this manner. In that position the heart is more flaccid and requires more exertion to overcome resistance, a fact which is best shown by the increase in the number of respirations from 50 to 80 per cent.

Functional murmurs are described as soft and low, short or long, not always blowing, and are frequently combined with, or the terminations of, a more or less normal heart-sound. In almost every instance they are systolic; in the adult they are mostly aortic, and then audible in the carotid; in the child they are more frequently found over the pulmonary or over the pulmonary and mitral regions. In regard to the locality and extent of their audibility there have been many differences of opinion; still there appears to be unanimity in regard to their inaudibility posteriorly in almost every case. A functional murmur may persist weeks and even months, but it has not the uniform quality of an organic murmur. It is more or less soft, or loud,

or prolonged. Many disappear quite rapidly, or, after having vanished, return. In this respect they differ widely from organic murmurs, which are more persistent as far as time and character are concerned. It should, however, not be forgotten that organic valvular murmurs may disappear either through recovery from endocarditis or through the establishment of compensation. But in these cases they diminish in loudness and duration very gradually only. Nor should it be overlooked that an increased frequency of the pulse, with its frequent and insufficient contraction of the heart muscle, and thin bloodvessels, and shortened valve excursion, conceals a murmur which was present when the pulse was slow, or which returns when a cardiac stimulant reduces the number of heartbeats.

Duplicated sounds should almost never be taken to be either accidental or functional. They are nearly always organic and of more value than Leube appears willing to assume, both the splitting of the second sound (gallop rhythm—UU) and that of the first (UU—"rappel" of the French). The former is often observed in aortic stenosis, in chronic nephritis, sometimes also in conditions of utter exhaustion, and in very bad cases of chlorosis; the latter in mitral stenosis, sometimes with oliguria followed by polyuria. Both of them are rare in infants and in the very old. A fine specimen of the last anomaly has been under my observation (Charles G., ten years old, with the diagnosis of mitral stenosis and chronic myocarditis) in my division of Roosevelt Hospital.

Vascular murmurs should not easily be mistaken for cardiac; as a rule, they are transmitted. They are very rarely confined to the arteries of the neck, either in the adult or in the young. The relatively large size of the carotid in the young, mainly in the rhachitical young, with its lowered blood-pressure, may

give rise to an occasional soft murmur. This infantile condition of the carotid (and basilar) artery accounts for the murmur which is often audible over the open fontanelle and was (rather erroneously) attributed by Fisher (Boston, 1835) to rhachitis only; it is quite possible that the irregular shape of the rhachitical carotid canal contributes to the murmur, which has always been mentioned among the "functional." If, however, the large size of the artery, with its consecutive diminution of blood-pressure, or an anatomical change in the carotid canal, or both, cause the murmur, to what extent are we justified in calling functional the murmur which is due to tangible anatomical causes?

Venous murmurs should never be mistaken for those originating in the heart. They are frequent, mostly about the chest and neck, and generally found in anemic adults, less so in anemic children, still less in infants, and never, it appears, in babies suffering from atrophy. The jugular vein is a frequent seat of murmur, particularly when the bulbus v. jugularis is large compared with the size of the vein; in these cases the murmur is explained by the formation of a vortex. The v. anonymæ also exhibit murmurs, which are combined with those of the jugular, are heard on both sides of the sternum, and are not isochronous with the sounds of the heart. When such murmurs are complicated with those of the apparently normal heart in adults, it is mostly safe to claim the latter as functional; when in children, and particularly in small children, as organic. For the number of very young children that develop other than organic murmurs is small. That is why, while venous murmurs are frequent in pernicious anemia, leucocythemia, scurvy, and hemophilia of the adult, even when cardiac murmurs are still absent or not marked, they are often missed in those of the young child. In fifty cases of in-

fantile scurvy I do not remember to have ever met them. Why should this be so? The heart of the young is comparatively large, heavy, and healthy. Its weight in the newly born is 0.89 per cent. of the body-weight; in the adult, 0.52 per cent. In the newly born the cavity, however, is small, 23 c.cm., compared with 100 c.cm. at the seventh and 140 c.cm. at the fifteenth year. Its muscle is massive, equally thick on the right and left sides, its contractions rhythmical and energetic and quite frequent. That is why the valves, which are small and elastic, vibrate easily and quickly. During the first five years there is an increase of the heart in bulk and weight, but none in circumference. That is why the area of dulness in early age is extensive and the impetus quite marked. The cavities dilate rapidly only after the fifth year, and the large arteries, mainly the carotid and subclavian, lose their disproportionately large size only after the seventh year.

This condition of things prevents a predisposition on the part of the infant heart to murmurs of any kind. Indeed, they are very rare in the first four years. In regard to this fact, which was clearly stated by me in 1888,¹ the authorities do not always agree. Fifty years ago Charles West expressed the opinion that they were frequent, but it is very probable he mistook or meant vascular murmurs. Gerhardt thinks they are rare, Biedert and Steffen, however, frequent. Bouchut believed them to be very frequent, under the impression that what he described as a proliferating endocarditis ("endocardite végétante") in the newly born must necessarily cause murmurs. What he so denominated was, however, nothing but Albini's valvular nodes, or the "blood-cysts" of Luschka and of

l'arrot, recently again described by Giovanni Berti ("noduli iematici delle valvole cardiache," 1898), that is, small elevations on the lower side of the valves containing or depending on minute hemorrhages. They are very frequent and liable to disappear, but do not always do so. For I have seen many a case and followed it up to advanced age, in which those nodules must have been large enough to result in the systolic murmur observed by me which proved persistent. They are apt to be on the mitral valve; are found in the newly born, and persist, and suggest the diagnosis of intrauterine heart disease; but are found in the left cardiac cavity, contrary to the rule according to which fetal inflammation or arrest of development occurs in the right side, and do not result in either dilatation or hypertrophy. Such cases, the like of which I have an opportunity to demonstrate in my clinic perhaps once a year, must surely have been observed by Hochsinger when he absolutely and positively denied the occurrence of functional murmurs within the first few years of life. Surely these murmurs when found cannot be called functional; they are organic.

Still these cases are exceptional, and do not controvert the fact that the normal anatomical condition of the infant heart is too powerful to admit the presence of merely functional murmurs. There are but few cases of undoubted functional murmurs in the infant on record. Thiemich¹ claims one. He tells of an anemic rhachitic baby of six months that died of pneumonia. A distinct systolic murmur was heard at the apex for a week before death; it was surely not extracardial, for it was distinctly heard in the intervals of respiration, and at the autopsy no valvular lesion was discovered. That is why the murmur is called functional. Still, we are told that the heart was slightly large

¹ Brooklyn Medical Journal, March, 1888: "The heart exhibits functional murmurs but seldom. Whenever there are murmurs present in the infant, it is safe to attribute them to organic disease rather than to mere functional disorder."

¹ Jahrb. f. Kinderh., vol. xli.

(may be, within normal limits), and that the muscle of the right ventricle was very pale and flabby. This condition means a myocardial anomaly, which is the more capable of rendering cardiac contraction incompetent and irregular, because it was localized on one side only. It is more probable that such a limited localization has that effect, while we may imagine that if the myocardial change were universal and equable, the contraction, though feeble, would also be equable.

In more respects than for merely anatomical reasons, the first years of life are peculiarly immune in regard to some of the changes which in advanced life give rise to murmurs. Tobacco, alcohol, tea, coffee, gout, and uric acid have not had time to work, hereditary syphilis does not attack the heart so often as the acquired form; erythematous and fatty degeneration of the heart and of the large arteries are exceedingly rare; brown atrophy of the heart is uncommon; the coronary arteries are normal; the myocardium, with the exception of thin deposits found on circumscribed parts of the pericardium, mainly near the insertion of the inferior cava and on the apex, does not suffer until some infectious disease has had an opportunity to affect it. After all, it appears fair to assume that the appearance of murmurs, no matter of what name, requires the presence of some changes in the cardiac structure, which, in most cases, should be ascertainable.

Murmurs are caused by congenital heart diseases, which are frequent. Generally they prove fatal within a few years, with the exception of defects in the ventricular septum and of the occasional cases of subacute or chronic endocarditis, which is sometimes met with in pale and puny children without a history of traceable causes, that may have been unrecognized rheumatism, or some other infectious disease. That is the more probable

the less the symptoms of rheumatism are pronounced in the young. As early as 1875¹ I could point out what has been confirmed since, that local pain and swelling, even fever, may be less marked in the rheumatism of the young than in that of the adult, and still endocarditis is more sure to come and more frequent; indeed, sometimes the first and almost only symptom. Besides rheumatism, whether ushered in by pharyngeal infection or otherwise, is more liable in children than it is in adults to be monarticular, and, therefore, liable to be overlooked. That is why many a case of rheumatic arthritis has been taken for traumatic, and *vice versa*. A girl of seven years entered my ward in Roosevelt Hospital with an old double, very coarse and hard mitral murmur and a painful left shoulder; had a new attack of endocarditis, followed by pericarditis and pneumonia in the two lower lobes; was still kept in bed, when four weeks afterward the right shoulder was taken, and had not left the ward when, three weeks after, the left foot was attacked with a new endocarditis. In the intervals she was free of pain and fever for weeks in succession. Thus three successive attacks of rheumatism, between which she appeared to be rapidly recovering, were monarticular.

What I mean to emphasize is this: that the absence of a history of rheumatism or some other infectious disease does not prove the non-existence of the latter. The variability of the symptoms, the difficulty of diagnosis, the absence of intelligence or experience in the parents, are just as many impediments to the correct appreciation of the present murmur. A systolic mitral murmur in a small child may easily be taken for functional when there is no history to explain it. The fact is, however, that while "rheumatism" is vehemently denied, "growing pains" are admitted,

¹ Seguin's Lectures, vol. 1., No. 2.

either with equanimity or with pride. Murmurs are often, probably mostly, occasioned by an uneven pathological endocardial surface, or by the incompetency of a valve. This incompetency may result from structural change or from faulty innervation. Bloodvessels also, in order to facilitate the production of a murmur, should have an uneven surface; mere narrowness does not cause it; for in several cases of congenital chlorosis in girls with narrow, but probably smooth, arteries, I never found a murmur, nor was there one in the case of a baby, fourteen days old, with narrow arteries, that was described by Al. C. Skene in the *American Journal of Obstetrics*, 1876. In two others, five and seven years old, I did find in the aorta and carotids murmurs which persisted as long as the children were under observation, without other anomalies, and without an opportunity to make a thorough diagnosis.

The occurrence of cardiac murmurs in abnormal conditions of the blood appears to admit of no doubt in adults, no matter whether they are due to them alone or to structural or functional changes in the heart and bloodvessels. The latter—*i. e.*, functional changes, should be doubted as long as the altered function may be explained by the altered structure. In chlorosis, scurvy, hemophilia, leucocythemia, and pernicious anemia of the adult a murmur is seldom absent; in the same conditions of the child, particularly of the infant and young child, one is rarely present. When we remember the superior development and the undisturbed condition of the young heart we feel obliged to attribute the absence or the presence of the murmurs, as the case may be, to the condition of the heart and not to that of the blood. Thus we should not be too anxious to claim any of the murmurs observed in the above-mentioned conditions as "functional," to the absolute exclusion of an organic ori-

gin. Similarly do we find that in chorea, for instance, in the adolescent and adult that had many years to develop, the rheumatic or other infectious form of valvular disease is almost always attended with a murmur, while there are many cases of the same complex of symptoms in the young not so attended. It is only in those cases in which a murmur appears and rapidly disappears, and is again observed after an intermission of hours or days, that we are fully justified in believing it to be functional only; for though it be the result of incompetency, either of muscular strength or of innervation, the structural changes, if any there be, cannot be very radical. Such differences are, to mention another instance, exhibited in bad cases of masturbation, which, when excessive, will cause a cardiac murmur in the adolescent or adult, but never once in the forty years, during which I have observed many hundreds of cases, in the very young. Another instance is that of rapid growth, which, in the very young, does not result in a sufficient disproportion between the heart and the body to cause a murmur, while adolescents mostly exhibit it as a symptom of cardiac incompetency.

In all these cases it appears that it is the condition of the heart which causes the murmur, but neither the blood nor an abnormal process of general nutrition or development.

In chlorosis the sounds of the heart are variously changed; there is frequently a systolic and now and then a diastolic mitral murmur, not always persistent; the second sound is rarely duplicated. Nor is the presence of fully developed chlorosis required to yield these alterations; neurasthenic young women may exhibit the same changes; they are also found in rare cases of lead disease. In most instances the patients are pale and nervous, the pulse is small; nose-bleeding may be frequent, but dropsy,

there is none. It appears, therefore, that nervous influences alone are sufficient to cause temporary murmurs. Indeed, there are those who claim the existence of a spastic contraction of the mitral orificial ring without any organic alteration. According to H. Audeoud and Ch. Jacob-Descombes,¹ Revilliod teaches that there is a temporary mitral and orificial narrowness. Constantin Paul describes a murmur, either soft or rough, over the pulmonary artery, complicated sometimes with a jugular and mitral murmur, which he attributes to the co-operation of anemia and of spasm. Huchard assumes the presence of a spasm of the coronary artery with symptoms of angina pectoris; he also speaks of "pseudo-angina" in nicotinized neurasthenics. Foville discriminates two kinds of spasm, one of which terminates in palpitations, the other in syncope. In all their cases and in those of a few others, there were some symptoms referable to the alleged changes; in some there was an increased area of dulness; in others there were either pulmonary, or mitral, or vascular murmurs, which would not persist, but disappear and return.

Dombrowski speaks of an organic and of a functional insufficiency and stenosis of the aorta and of the tricuspid. Drasche, Heitler, Dombrowski report cases of functional mitral insufficiency caused by feebleness of the myocardium. Among others, Austin Flint described long ago cases of presystolic murmurs referable to mitral stenosis, when there was much aortic insufficiency, but at the autopsies nothing mitral. Thus both spasm and incompetency are believed to cause murmurs. Both may be explained by insufficient innervation, and murmurs thus produced deserve to be called functional, as long as the anatomical condition of the nerves whose physiological action is at fault cannot be calculated or

even estimated. The complexity of the anatomy and physiology of the centres in the medulla and of the peripheral nerve branches is so great as to render every attempt at exactly weighing their abnormal action perfectly futile.

Leaving the field of neurology we are on much safer ground when considering the normal and abnormal action of the heart, mainly in regard to the origin of murmurs, in connection with the condition of the heart muscle, which has not had the attention it deserved bestowed upon it until a few years ago.

Endocarditis and pericarditis have until a short time ago attracted the principal attention of clinicians. Indeed, the lesions of the myocardium were extensively studied by pathologists before their results were utilized in the interest of diagnosis and practice. And still there is no period of life in which the muscle of the heart may not be of pathological interest. Even coarse lesions may be found in early infancy, besides those congenital chronic cases of endocarditis and arrests of development which lead to cyanosis. In Gerhardt's *Handbuch*, twenty years ago, Dusch published fourteen cases of acute and seven of chronic myocarditis, and seven cases of aneurism of the heart, five of which were in the ventricular system, two in the wall, in children. Diverticula of the heart have been found even in the newly born, also intratrabecular defects; they were sometimes of syphilitic character.

Of the latter variety was that found by J. Arnold¹ in a syphilitic female one and one-half months of age. Syphilis will probably be found in many more instances of congenital heart disease than have been hitherto recorded. If so, the lesions will not necessarily be confined to the right side.

In advanced age myocardial changes are frequent. Their causes are numerous; indeed, most diseases affect the

¹ Les altérations anatomiques et les troubles fonctionnelles du myocarde, 1894, p. 119.

¹ Virchow's Archiv, vol. cxxvii.

heart muscle. Not to mention the results of thrombotic and embolic processes which lead to anemic necrosis, to septic infarctions, or to fibrous myocarditis, we meet with acute myocarditis mostly in infectious fevers, accompanied with swelling of the intermuscular cellular tissue, minute extravasations and sometimes fatty degeneration. The same infectious fevers, also the presence of endocarditis or pericarditis, may give rise to granular degeneration of the parenchyma of the heart muscle to such an extent as to obliterate the striated structure. This is the condition which was formerly attributed to the influence of excessive body heat only. Fatty degeneration, mostly of the left ventricle, depends on the failing nutrition of anemia, cachexia, age or fevers, and complicates changes in the pericardium and in the coronary artery. Fatty overgrowth of the pericardium or between the muscular striæ is often found beyond middle life. Brown atrophy with its pigmentation mostly about the nuclei, which follows valvular disease, and is met with in the senile heart; amyloid degeneration of the connective tissue, amyloid or hyaline changes in the bloodvessels with their influence on the nutrition of the organ; and calcareous deposits, small or large—all of them are frequent, and many are found in autopsies after no symptoms pointed to their presence. Still, there are often symptoms caused by them. There may be dyspnea or angina pectoris; the pulse may be feeble, irregular, frequent, or slow; the cardiac rhythm galloping, the sounds replaced by murmurs. Indeed, murmurs are a frequent result of myocardial changes. I have seen them coming and slowly going, when they could be explained by nothing else. That parenchymatous changes in the heart muscle, and still more that interstitial inflammations of the connective interfibrillar tissue, should get well under the influence of diet and

rest and medication can be denied only by those who have not seen the different stages in the same processes,—invasions and recoveries,—in other organs. The correct estimation of myocardial changes in the living, however, is beset with peculiar difficulties, mainly in this that they may be local and not accessible to percussion. Even thorough and universal myocardial alterations need not change the size of the organ.

A few conclusions appear to be self-evident:

1. The diagnosis of deranged function in any organ is only a makeshift and justifiable only as long as we are ignorant of the physical cause of that derangement. "Functional" is called the heart murmur, the anatomical cause of which we do not know. That is why a skilled diagnostician may recognize fewer functional murmurs than one who will not diagnosticate a heart disease unless he have all the symptoms, including dilatation and hypertrophy.

2. The same disorders of the blood and nervous system in which heart murmurs are observed in the adult, do not cause them in the small infant. In the latter the heart is larger, more robust, and more powerful, and its contractions are more uniform and effective; its two ventricles are equally muscular, or nearly so, and the valves are smaller. Thus the greater frequency of murmurs in the adult is attributable to the physical condition of his heart, and should not be explained by a deranged function.

3. Even in the present limitation of our knowledge we should agree to call functional only those murmurs which are temporary, or intermittent, or variable in their character. They are met with in the neurotic and neurasthenic, in the (adult) anemic, sometimes in syncope or in chorea minor, and occasionally in rheumatism. Even here they should be recognized either as myocardial or as neurotic.

APPENDICITIS: ITS SURGICAL TREATMENT.

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IN surgery generally, reviewing the entire field, we find that it is the imperfect, the uncompleted operations which give patients needless trouble and suffering and make difficult and onerous the work of the surgeon into whose hands they fall for completion. Incomplete procedures have been entirely too frequent in a variety of methods for treatment of appendicitis. Only a few surgeons make it an inflexible rule to complete the operation at any cost.

The first step, the one of primary importance, is diagnosis. It is needless to go into discussion of the more salient and prominent symptoms—those safely guiding to a correct determination of the trouble. The experienced clinician is familiar with the history, pathology, the numerous subjective and objective symptoms of this very common disease. If not they should read the good literature on the subject and attend at the operation tables of those who deal surgically and successfully with these cases. He should not be so stupid as to overlook a disease that may be killing his own child without recognition of the actual trouble, until it is necessary to catheterize his own flesh to discover a large swelling and pus accumulations mechanically preventing micturition.

From a personal point of view, that of one following abdominal and pelvic surgery as a specialty, with an experience running into hundreds of cases, I feel that I am not making an extreme statement when I say that there is but one treatment for appendicitis, early or late in its stages, and that is to cut it from the head of the cecum and close the hole. A few general surgeons and many good

general practitioners of medicine oppose operative interference and practice palliative methods, making all sorts of excuses or apologies when they lose a patient. Nearly all the cases thus lost could have been saved by prompt and complete surgery. There should be no mortality in these cases.

One familiar with the great variety of adhesions met with in pelvic surgery, the numerous structural changes, the portions of viscera involved, the great quantity of virulent filth found filling the pelvic basin, the numerous pus pockets repeatedly found beneath the bowels anterior and posterior to the broad ligaments, and accustomed to freeing, cleansing and repairing all involved intraperitoneal viscera as well as the clean removal of disorganized pelvic viscera, should not be afraid to free bowel adhesions and enucleate a little appendix, cut it from the head of the cecum and close the opening.

There is reproach to our surgery in the fact that many surgeons are selecting the simple recurring or so-called catarrhal cases for operative interference, refusing to operate upon the acute, virulent or infectious cases. A good young surgeon of my acquaintance, referring to his own work, stated that he had done thirty-two operations with one death, and that he had rejected six cases too far gone for surgical interference. He should have saved two or three of the six rejected cases. Twenty per cent. is too many to reject. However dire the condition, the one chance for life should be given. While there is breath, while there is a heart throb, operate. There are no "edges" or "border lines" that should be

feared; there is peril in appendicitis in any and all its forms, in its every stage. There is more peril in that timidity which prompts and leads to delay than in that courage which hazards the one almost certain chance of relief, by prompt, thorough and complete surgery; the one saves where saving is possible, the other kills. We will have better success, a more unbroken and uniform triumph in dealing with this trouble when we dispense with toying.

We should not wait for "strong evidence" of perforation, abscess, general peritonitis, rapid, weak pulse, anxious respiration, distention of abdomen, though even when these symptoms are present the patient may be operated upon and saved. Even in mild cases the element of probable recovery should not be considered; there should be a clean removal of the appendix, for we all know as a rule these cases recur; there is a continuous peril hanging over such patients, and there is a strong temptation to treat them in the same temporizing way as in previous attacks, until finally death results. It should be kept in mind that making statistics is not in this business, but life-saving is. The appendix is fortunately at a very convenient point for good surgery. There is no good surgical excuse for ever leaving it, certainly not the excuse that it cannot be found. Such an excuse is a reproach upon the courage of the surgeon, for it can always be found; only the timid fail to find it.

I am satisfied from a long experience in pelvic surgery that those who would do good clean and successful surgery in appendicitic cases should first serve an apprenticeship in pelvic surgery. I am sustained in this statement by the fact that too many general surgeons are still doing the Willard Parker operation, that is, simply following the puncture or incision method. In the last three or four of my operations for appendicitis, all done since the twentieth of May, I found the history

as well as all the typical and classical symptoms of neglected or delayed conditions. This delay is repeatedly due to that over-confidence too many good general practitioners have in calomel and salts, both remedies absolutely worthless in the virulent, gangrenous, or perforated forms of appendicitis. Such treatment in these cases is but temporizing with a malady that always proves fatal unless there is prompt surgical intervention.

In each and all of these cases I did the median operation, because they were distended, vomiting and dying of acute general suppurative peritonitis. I washed a quantity of filth, feces, muddy fluid and lymph from the peritoneal cavity before seeking the appendix. In one I found three holes in the appendix and another sloughed quite in two. In three of the cases I finished the operative work and toilet by placing copious drainage without sutures. They are all recovering. In the examination of these cases I found all the characteristics of pus in the right iliac fossa; had I simply incised and drained surely they all would have died. I consider the lateral operation in many cases a mistaken procedure; where there is much filth and bowel adhesions the median operation favors speedy freeing of all adhesions and a good clean toilet; it also favors general drainage. If infection can be arrested, nearly all such cases will recover.

I have been in the habit of practising two procedures, namely, the median operation, where catharsis fails and obstruction in any form exists; the lateral operation, where the symptoms are strictly local. The transfixion and inversion methods leave a stump and an infected ligature in a dead space; the transfixion or circular ligature and cautery leave a dirty pedicle and an infected ligature in a dead space, while leaving a small portion of the diseased and disorganized appendix is equally unsurgical.

The method I prefer and practice is simple and rapid. The meso-appendix is transfixed and tied, then freed from the cecum, four sutures are passed—two above and two below the appendix—including a portion of the muscular or resisting coat of bowel, the appendix is then clipped off flush with the cecum and the four introduced sutures are tied. The operation, so far as mere method is concerned, is so simple that even a sophomore student should do it well. If care is exercised in the introduction of sutures and also in the administration of the anesthetic, cutting the appendix out while there is no other disturbance or nausea, there will be scarcely a bubble of gas or discharge of the least filth before all sutures are tied.

Very generally in discussing this subject I allude to drainage, drainage quite general in its character. The open treatment, while it is not one of special preference, is the only method that saves the seemingly hopeless cases. I know that they get well in my hands by the open treatment. I further know that the class of cases in which I use the open treatment are those rejected or abandoned by a number of surgeons; many possible to save are left to die without any attempt being made to relieve their condition. We cannot give drainage too serious consideration. The general surgeon is notoriously afraid of the peritoneum and infection. In his writing and discussions he constantly refers to the danger of freeing circumscribed adhesions, urges the avoidance of soiling the peritoneum and constantly leaves undone some important steps of intraperitoneal surgery. The peritoneum is the best friend the surgeon has in this work; it will digest a baby or beefsteak if clean, and it can be made clean and kept clean. The general practitioner dreads a surgical death and, in very many instances, would rather the patient would die after his delay or neglect than attempt to save him surgically.

He sometimes says, "Doctor, if you think there is any danger, don't operate; death will hurt my business."

In certain stages of the disease the operation is dangerous; there is only one thing more dangerous than the operation, that is the disease itself. Associated with the operation in all the delayed, neglected and severer cases there is always an element of doubt as to the issue; in those cases where the condition is not surgically interfered with the issue is certain—namely, death. It should be kept in mind that I refer to genuine appendicitis. The operative technic is not difficult and recovery almost certain when the condition is early and thoroughly dealt with by clean removal of the appendix, freeing of all adhesions, irrigation and cleansing of all the parts, judicious drainage and clean toilet. The operator should be sure that he has appendicitis to deal with. The little appendix is not responsible for every slight or even acute pain in the abdomen.

A distinguished American teacher and author laid down the dictum that, "If every case of appendicitis were operated on, the mortality would be tenfold what it now is." This wild conjecture is disproved by the results obtained by surgeons who have had most to do with these cases. Physicians who blindly follow this dictum let patients die that good surgery would save, and they cannot escape the guilt of their neglect or wilfulness by pleading that conditions rendered the case hopeless, that there was general suppurative peritonitis, septic paresis of the intestines or multiple abscesses in the peritoneal cavity. If these conditions exist the physician has been doing very considerable guilty waiting for "strong evidence," he has been inviting the conditions he regards hopeless. The teaching referred to has done and is doing mischief; it has resulted in permitting many to die whose lives should have been saved. The condition is never absolutely

and irrevocably hopeless until the patient is dead.

In neglected or unrecognized cases of appendicitis some one is to blame, either the patient or the attendant. But if the patient is still living the surgeon should not cry "too late, hopeless." It is in these cases drainage demonstrates its great value. A ten-minute operation, a short, stimulating anesthesia, a cleansing toilet, and copious drainage saves a large per cent. of them. The loin incision and wick drain have little or no value. Surgeons using this method of drainage fail to recognize the general nature of the disease; they fancy that it is localized while they have to deal with obstruction and a peritoneal cavity full of filth. Those operators doing the best work should do better and would if they would give every patient a chance for recovery. Let statistics and ideal operations stand aside and not embarrass a surgeon's effort to save life!

The mortality in cases of minor attacks or fancied disease should stay the hand of the man from operating who claims that there would be a two per cent. mortality in operations on well people. Such declarations indicate cross-roads, old country school training, whereas the preparation should be made by one of the old masters who adheres strictly to the more ancient methods of discipline.

It is a common experience to operate on patients who have changed doctors twice or thrice. The first physician failed to recognize the trouble and relieve the patient, or, recognizing it, recommended operative interference and was discharged. The second recognized the precise nature of the trouble, but could cure all such cases with opium, salines or sweet oil; failing, he calls in a consultant who recommends surgical intervention, but thinks it is too late, or he may try his therapeutic pacifics before he yields to the inevitable. On the day of this writing I operated on a case with the forego-

ing history, a girl sixteen years of age, who had passed into the hands of the third physician. The case was one in which an average physician could have made a correct diagnosis with promptitude. There was a clear history and the symptoms were prominent; a mass as large as the fist in the right iliac fossa, her pelvis full. The poor neglected child had had repeated attacks, pus pockets and adhesions had been forming rapidly, there was leakage and a generally infectious peritonitis; the pelvic cavity was full of adherent small bowel, the cecum dark and disorganized with multiple pus pockets crowding behind it. The manager of the University of Pennsylvania baseball team, a senior, was also in the hands of the third physician. Here also leakage had occurred and a general peritonitis. In his first attack he was treated for typhoid fever, from which he did not recover until I removed large, old pus accumulations, his disorganized appendix, freed quite general intestinal adhesions, repaired disorganized portions of bowel and drained thoroughly; this was followed by speedy recovery.

Drainage through the loin space has been practised by a few fearing intra-peritoneal infection, and has been recommended for those operators of limited experience. The practice and counsel are both bad, and have resulted in the loss of a number of patients. Unfortunately for sufferers both special and general surgeons have been slow to adopt drainage. The methods practised in many cases have been rather original or experimental in character, methods tried by old and experienced surgeons, those who value drainage, and have been rejected by them for their ineffectiveness. There are those who ask too much of drainage, they expect drains to carry off the contents of pathological specimens as well as to drain the specimens themselves. With their surgery they go only far enough with their incisions or punc-

tures to favor drainage. They should remove the disorganized organ or member and not demand so much of drains.

At this point it is pertinent to quote from and make brief comment upon a very excellent paper by Dr. Robert T. Morris, one of the best operators and best authorities in this or any other country upon the subject of appendicitis:

In the *N. Y. Medical Journal*, for April 29, 1899, I published a list of seventy-six consecutive cases of the most dangerous class of appendicitis, that had gone on to the stage of general suppurative peritonitis, septic peritonitis with liquefied lymph instead of abscess formation, multiple acute, single acute, and old abscesses, and managed by the principles briefly outlined above, with *only eight deaths*. I have operated on a very much larger number of cases in the interval, with various adhesion complications, and primary infection cases before abscess formation, and have not as yet had a death in this class of cases. Most of them were operated on through the inch-and-a-half incision.

In one class of cases above reported the mortality was *nil* and should always remain so. In the other there was eight deaths in seventy-six cases. In my belief this mortality would have been greatly reduced had Dr. Morris used a three-inch median incision, a thorough toilet and more abundant drainage. A few of these cases and a small per cent. of those who refuse operation would recover if their abdomens were only drained. It is surprising how long they live—nine or ten days, with their abdomens full of filth.

Multiple incisions favor shock, hemorrhage, and increased infection. The operator should be more familiar with indications and make the one required incision that is favorable for all surgery. The remonstrance offered against the median incision is made by the very class of men who refuse to operate upon the class of patients saved by the men who recommend and practise the middle-line incision. They do admit "that the number of cases is limited in which this

route offers any advantage." If advantage there be, then let us always take it to save life. The two objections offered to the median operation are, first, anatomical grounds, that the incision is too far removed from the appendix. The error in such an argument is illustrated by the fact that we remove the appendix in about ten per cent. of all suppurative forms of tubal and ovarian disease. It is commonly found disorganized and strongly adherent to right suppurating tube and ovary, and occasionally it is found disorganized and strongly adherent to left diseased tube and ovary and to sigmoid. The second objection is "that the peritoneal cavity cannot be so well protected against infection."

Anatomically and surgically the central incision affords the greatest possible surgical liberty and every precaution against infection can be practised. There is no "fallacy" in the median operation when done for specific surgical purposes, nor is there "fallacy" when so done. The operator condemning the median operation does many incomplete operations without knowing what he has left undone, the patient is left to a possible if not very probable recurrence of trouble, while the chances are very great that a post-mortem will reveal uncorrected conditions, those the operator failed to reach and deal with as he should. It is then he comes in with that pitiable, apologetic cry, "too late, hopeless."

It is a lamentable fact that through the fault of the patient or attending physician a great number of these cases pass beyond any possible relief by the surgeon, but that is when the patient is dead. It is to be hoped that general practitioners and surgeons will early attain such knowledge of this murderous disease and such skill in its treatment as will relieve us from witnessing one of the saddest of bedside pictures, that of a youth or adult, bright and quick of intellect, restless in intense pain, with cold

extremities, a drum-like abdomen with an empty basin and a bowl of ice near the pillow; the disease only diagnosed at the time of the recognition of the symptoms of dissolution thus late, secur-

ing to the attending physician the high honor of clearly and intelligently informing the family that "the patient died of appendicitis, and that the case was hopeless from the first."

CYSTOID DISEASE OF THE TESTICLE: TERATOMA TESTIS?

By F. R. STURGIS, M. D.

New York.

QUIDAM, ætate 28, applied to me in the latter part of 1898, with a tumor of the left testicle. So far as the history of his disease is concerned, it is vague, and might be summed up briefly as follows:

Two years ago, while riding on a bicycle, he bruised his left testicle, how, he cannot say, but he knows that the organ was quite painful, and became at once slightly enlarged. It remained in this condition for two years, when about three weeks before I saw him, the organ, without any known cause, rapidly enlarged. Apart from the time of the original injury, there has been no pain, except once during the summer of 1898, when, after a salt-water bath, the testis became exceedingly painful for several hours. This was not due to any injury, so far as he knows. At this time he was seen by his regular medical adviser, who suggested the use of a suspensory bandage.

His family history shows that some of his direct forebears had died of consumption, and there was some evidence of the disease in his immediate family. It was learned that his grandfather suffered from a disease of the lip, presumably epithelial cancer, for which two operations had been done, but from which this member of his family did not die. The cause of death in this case was accidental, and apart from any physical disease. His father and mother are both living and in good health.

His sexual life has been prudent and one of continence; he denies vigorously ever having suffered from any venereal disease, except a clap ten years precedent. He has never had syphilis. His general health is fairly good, excepting that he has been subject to attacks of "nervous dyspepsia," accompanied by nausea, vomiting and some diarrhea, and marked abdominal pains. The

patient is a strong, well-built, young man, of fairly healthy appearance, but evidently with strong nervous tendencies.

An examination of the testis revealed this organ as very much enlarged, hard, almost round, smooth, without any bosselation or nodular eminences. No fluctuation or point of softening could be detected. The line of demarcation between the testis and the epididymis could be easily traced. The organ is insensible to pain, and bears quite rough handling and pressure. There is some discomfort from the weight. The cord is not implicated; the glands in the groin are free and not enlarged. The long circumference of the organ, including the scrotum, is 22.8 cm., both in its vertical and transverse measurements. The position of the organ in the scrotum is diagono-transverse, with the epididymis looking downward. The scrotum, although much distended by the growth, is not diseased, nor is there a varicose condition of the veins.

Notwithstanding his vigorous denial of any syphilitic disease, I placed him experimentally upon iodide of potassium in 20 grain doses, with douching of hot and cold water to the testis alternately. I saw him ten days later. There had been no change so far as the pain was concerned, nor was there any diminution whatever in the size or feeling of weight in the testis. Measurements gave the same figures as on the first examination. The testis this time was drawn close up to the ring. This, however, was due perhaps to cold. I increased the iodide to 40 minims of a saturated solution, and continued the douching, but when I saw him a week later, there still had been no change whatever. The testis was as large and hard as before, and the measurements remained the same. On consultation

with his family physician, it was decided to give the patient the benefit of a prolonged rest for a month, and he was put to bed, given a peptonized milk diet, which was gradually increased in solid constituents, while locally the diseased organ was strapped in order to cause absorption. This was pursued for very nearly a month, without any good results whatever. At the end of that time his family physician told me that the organ had seemed to increase rather than to diminish in size, and now measured in its long circumference, 25.4 cm., and in its transverse circumference, 24 cm. There was no sensation, except as regards weight, which produced aching rather than pain. The cord, which at the last visit, on December 8, had been entirely free from disease, was now thickened and swollen for 1.3 cm. in length. It being evident that nothing further could be done in the way of internal medication which would promise the slightest benefit, it was decided to remove the diseased organ, this being done in the usual way. There was nothing special to note in the operation, the cord being ligated so as to include all the thickened and diseased portions, estimated without measurement to be 6 cm., leaving sound tissue at the proximal end. The tunica vaginalis was not thickened. There was no adhesion between the two layers of this tunic, nor between it and the tunica albuginea; nor was there any fluid. The spermatic cord was thickened, and apparently implicated in the disease for about 6 cm. from its insertion in the epididymis. There was nothing special to note in the aftercourse of the disease, which pursued a perfectly satisfactory progress, doing nicely under treatment, without the slightest bad result; the wound being entirely healed in a few days over a month after the operation.

Up to this time the question centred between a diagnosis of tuberculosis testis or carcinoma testis, and I believed that in this instance I had the former disease to deal with. The specimen was handed to Dr. F. E. Sondern, of this city, for examination and report, which was done with the usual thoroughness and care which characterizes the work of this gentleman. I am inclined to believe from what he tells me that at first he also thought it was a case of tuberculosis of the testis. I append herewith a copy of the report which Dr. Sondern made to me on the case:

REMOVED TESTICLE FOR EXAMINATION.

Remarks.—Principally the testicle and secondarily the epididymis are uniformly enlarged, the whole measuring 13 cm. in its

longest diameter, 12 cm. wide, with 8 cm. of cord attached, the whole weighing 285 grammes. (Pl. I., Figs. 1, 2.)

This mass is hard and nodular, epididymis as well as testicle, but on careful palpation several soft areas can be made out.

Several small nodules can also be felt in the cord.

The superficial vessels of the whole, as well as the vessels of the cord, are abnormally large. (Pl. I., Figs. 1, 2.)

Longitudinal section of the tumor shows a somewhat thickened capsule. There are a number of septa, which seem to divide the whole mass into several more or less imperfect lobes. (Pl. I., Fig. 3.)

Several of these consist of soft tissue showing necrotic areas in the centre, in some instances amounting to cavities filled with pus and necrotic detritus. On microscopic examination, these soft areas, as mentioned, are found to consist of an adeno-carcinomatous structure, necrotic in places. (Pl. II., 1.)

Other lobes, notably the central ones, are very hard and nodular, and show on close inspection many nodules of cartilage, between which are found many cysts, mostly small in size. These cysts contain a cheesy material. On microscopic examination, these areas show many islands of hyaline cartilage with central cells larger than those of the periphery, several showing a distinct beginning of bone structure. (Pl. II., 4.) Between these areas of cartilage there are many smaller and larger cysts lined with cylindrical epithelium, with atheromatous and fatty contents, in which there are many cholesterol crystals. (Pl. II., 5.) Some of the cartilaginous areas are surrounded by a colloid material.

Other portions of the tumor consist of a moderately dense tissue, showing a number of smaller and larger cysts. On microscopic examination, this is found to be a very vascular connective tissue containing many fairly large round and short spindle cells, strongly resembling embryonal connective tissue, and reminding one of sarcoma. (Pl. II., 2, 3.) In this tissue there are a number of larger and smaller spaces or cysts lined with large squamous epithelial cells. (Pl. II., 6.)

In other regions glandular tubes are met with, lined with cylindrical epithelium; showing papillary outgrowths into the lumen (Pl. II., 7), and presenting small amounts of unstriped muscular tissue immediately outside of the tubes.

Normal tissue of the testicle could not be found.

With so varied a composition, this tumor

undoubtedly belongs to the class of teratoma of the testicle.

Respectfully submitted,
(Signed) Frederic E. Sondern.

The patient was not seen again for three months, after the wound of operation had entirely healed, when I was called to see him in consultation with his physician. I found him confined to his bed, having been suffering for some short time before with a severe attack of pain in his bowels on the right side, similar to what he had so frequently suffered from before. In addition to this, the patient also had a swelling of his left leg, which was attributed to the fact (*ægroti dictu*) that while riding in a hansom cab, the seat being too high, his legs did not touch the bottom of the vehicle, which he was sensible produced numbness and pain in the leg. This explanation, it must be confessed, sounds rather inadequate and far-fetched, and must be taken for just what it is worth. The leg itself, both patient and physician declared, was not as brawny or as tense as it was on the morning of the day on which I saw the limb.

Examination of the leg showed both the thigh and calf of that side to be appreciably larger than its fellow. The measurement of the right thigh in the median third was 20 inches, of the left 21. The right calf at the thickest portion of the gastrocnemius was $17\frac{1}{2}$ inches, of the left $18\frac{1}{2}$. These measurements correspond with what was seen yesterday and this morning, notwithstanding the declaration that the leg was not as large on the afternoon of the day that I saw it as it was in the morning. Two points of slight tenderness were noticed, one in the popliteal space, and the other just over Poupart's ligament, where the femoral vessels emerge from the ring. The tenderness was very slight, and probably of no material importance. The temperature was not taken, but yesterday it was stated to be a trifling amount above the normal, one degree above. The vein could not be found to be enlarged or thickened throughout any portion of its course, nor was there any inflammation following along the course of the vein. A rectal examination failed to show any enlargement of the prostate, or of any of the veins in the pelvic cavity, or any of the lymphatics. There was no pain on pressure anywhere. Percussion of the abdominal cavity showed general but not excessive tympanites. The site of the former operation was examined, and a very slight and almost inappreciable scar was found. There was a moderate amount of scrotum on the left side, and the parts were in an exceedingly good

condition. No thickening of the stump of the spermatic cord could be felt, either in the groin at the ring, or in the pelvis per rectum. The right testis, on examination, is found to be normal. There is no swelling or thickening of the testis, epididymis, or cord on either side. The patient complains of a great deal of pain in his belly, and that his sleep has been much disturbed. A few days ago he had almost complete aphasia without any known cause, unless it be attributed to an overloaded stomach, which he thinks was the cause, for, after emesis and catharsis, his speech returned. A few mornings ago his wife was much alarmed by his mumbling and incoherent speech immediately after waking, but this symptom the patient was disposed to jeer at. There was no evidence in the face or elsewhere of any signs of paralysis or of cerebral disturbance.

Two days later the swelling of the left leg had subsided, the measurements for the two legs being the same, at the thigh 20 inches, at the calf $17\frac{1}{2}$, measurements being taken at the same points as two days before. His general condition, however, is not good. He looks pale and sallow, and is very easily fatigued. This sallowness I was particularly struck with, as it differed from his former appearance after the operation.

Two days later I found the patient suffering with a great deal of pain in his thighs, with a sense of weakness, inability to walk or stand up straight, owing to the pain, which he said began in his groins and extended down his thighs for the upper third. Examination showed that there was no difference in the size of the legs, and no sign of any enlargement of the veins on either side. Beginning with a point at the inner border of the external abdominal ring, and running down along the course of the femoral vessels, tenderness for the upper third of the thigh on both sides was noted. The most marked tenderness was over the inner border of the sartorius muscle, and the inner border of the adductor longus muscle (Scarpa's triangle). There seemed to be no tenderness in any portion of the abdominal cavity, but as soon as the groin was touched there was tenderness. In both groins, especially the right, there were one or two slightly enlarged glands. The patient could stand up, but it required an effort, and had to be done slowly, in the manner of a patient with lumbago.

Five days later the patient was much more comfortable. There was less pain in the legs, and he could extend the legs now without pain in the thighs, a condition which has

been present almost from the first, and which I had omitted to note before. Examination showed that there was no return of the swelling in either the thighs or the legs; pain from the groin to the knee along the course of the femoral vessels is much less; the glands in the groin are much reduced in size; from the knee down to the ankle there is more pain and tenderness than in the upper half, but even this is less than it was before. His general condition is bad; his appetite is poor, and he does not seem to be gaining in strength.

Two days later his condition had improved, and he was much more comfortable. The examination of both legs showed an absence of pain along the femoral canal in both legs, with the exception of one or two points, where he complained of a slight tenderness; one is in the groin, and the other near the knee. He can extend his legs without any pain. Below the knee there is still pain along the shin bone on the inner side of the legs, and behind along the popliteal vessels. Both legs are slightly swollen from cellular edema. On pressure, there is marked pitting over the ankles and along the shin bone on either side. Examination of his belly shows nothing abnormal, except for the presence of several varicose spots, but there seems to be no tenderness upon pressure. No signs of any tumor can be found now, nor have there been previously. His general condition is still weak. He has not got out of bed, owing to the feeling of debility, and pain in his legs and belly when he tries to stand up straight.

Three days later the edema of his right leg had very much diminished; there was still slight pitting on pressure along the inner side of the tibia. Upon deep pressure at the external ring of the right leg an expression of slight pain could be elicited, but the rest of the thigh seemed to be comparatively free. The right leg, although showing more edema than the left, which showed very little indeed, was the stronger of the two. The particular point of pain complained of on his left side was in the calf of the leg, where a small elastic nodule could be felt, piriform in shape. This was tender upon handling, but was neither red nor inflamed, so far as the skin overlying it was concerned. On standing up, there was no trouble on the right side, but on the left side it was very painful to place his weight upon that leg. If he could bend his knee and stand as in *talipes equinus*, he could do fairly well; even then, however, there was some pain. Although his general appearance is perhaps a trifle better, he still

looks exhausted and sallow. He was now moved out of town, since which I have learned his condition has not materially changed.

Before passing on to the consideration of the tabulated cases which I have collated, let me call attention to certain points in the history of this case which are not devoid of interest, and which possibly have a bearing upon the etiology of the case.

In the first place, as regards his family history, there is some evidence to show that the family is tubercular, or at least certain members of it, but inasmuch as the disease which we have under consideration is not tubercular, and it is not likely that the tubercular family history has had anything whatever to do with the disease of the testicle, we may dismiss it without further consideration; but there is one other point which is worthy of serious thought, and that is, what was this disease of the lip which the patient's grandfather suffered from? Was it cancerous or otherwise, and if cancerous, would it have any direct or indirect bearing upon the production of the disease in the grandson? It would appear as though the growth was probably malignant from the fact of its recurrence; inasmuch, however, as there is nothing positive upon this point, it can be merely considered as among the possibilities, but this point is adverted to more particularly because in none of these histories have I ever run across the question of the possibility of hereditary transmission.

The next point is with regard to the growth of the tumor. The first growth, or rather enlargement, was apparently the immediate result of an injury, and at that time there was pain, but it does not appear to have been of a very acute character, nor did it apparently last long. While this slight enlargement still continued for two years, the pain entirely disappeared, except on one occasion, when, after a salt-water bath, the testis became exceedingly painful for several

hours, but this pain was apparently not due to any injury. Then, suddenly, and without any known cause, in three weeks the testicle became enlarged, practically to the size at which I first saw it, to wit: 22.8 cm. in circumference; there it apparently rested for a while, and then very shortly after I saw him, within two months, the testis again took on a fresh start and increased in size, notwithstanding that for four weeks of that time he was at rest, and practically upon his back.

Ever since the beginning, and with the one exception already noted, there had been no pain in the organ. It bore pretty rough handling, the only point that the patient noted being that its weight caused a sensation of aching in the back. This we see, when we come to analyze the forty cases which I have collated, is not at all uncommon; indeed, it seems to be of usual occurrence.

In this connection also, the condition of the cord is of interest. At first there was no enlargement or thickening whatever of the cord; it was perfectly free from disease, but during the last month of the retention of his testicle, and while he was at rest, the cord became implicated, and was found at the time of the operation to be thickened and swollen for 6 cm. in its length.

His health was generally pretty fair. He was a stoutly-built, well-nourished-looking young man, and yet he had been suffering for some time with what was called "nervous dyspepsia," and associated with decided pains in his abdomen. The question has occurred to me whether these pains, etc., in his belly might not be really due to some abdominal growth, although no evidences of a tumor are yet visible, and that the trouble of the testicle is metastatic and not primary. This is purely conjecture, but there seems to be sufficient evidence in the history to warrant giving it serious consideration, which, however, can only be

fully settled in the further progress of the case.

In this patient the prognosis is naturally not favorable. The condition of affairs revealed by the microscope, the history of the disease in the testis, the subsequent condition and illness of the patient after the operation, all give rise to the belief that there is serious trouble behind, and whether it be associated with infiltration of the internal organs or not, remains, as I have already said, for time to determine.

Turning now to the pathological specimens, we observe that both the testicle and epididymis are uniformly enlarged, and both are hard and nodular, although, when the tumor was examined in situ, it gave an elastic and smooth sensation to the fingers, rather than a nodular one, but it is to be noted that on careful palpation several soft areas can be made out. In connection with the pathological history, it is noteworthy that several small nodules can be felt in the cord, but this nodular condition only appeared in the cord in the last four weeks of the existence of the disease. It is evident, therefore, that there was an extension of the disease from the testis, where it started, to the epididymis, and from there to the cord. The vessels of the testis, as well as of the cord, were enlarged, a point which Sir Astley Cooper was inclined to believe as pathognomonic, but which is at present considered as of no special value in the question of diagnosis.

The capsule, that is, the tunica albuginea, is, as we should expect to find it, thickened, although sometimes the opposite is true, and the tumor seems to be divided into more or less imperfect lobes by the existence of a number of septa.

The stroma of the testis seems to be composed of several materials; first, of a very vascular connective tissue, which contained fairly large round and short spindle cells resembling sarcoma, as well

as embryonal connective tissue. In addition to this, there is adenoma, carcinoma, cartilage and non-striated muscular tissue. Interspersed in this stroma are cavities which are full of pus and necrotic detritus, and this detritus appears to consist of adeno-carcinoma. The cartilage is scattered about the tumor, in some points showing the beginning of bone structure, and the cysts which are formed would appear to be not primary cysts, but formed by the destruction of tissue which at first was solid, and was perhaps either sarcomatous or fibro-cellular. These cysts vary in size, and are found to be lined with squamous and cylindrical epithelium, and in some of the cysts there seems to be offshoots of papillary growth. Certainly with tissue derived from so many blastodermic layers, it might readily, from the pathological point of view, be regarded as a teratoma of the testicle.

THESIS.

In order to study this class of disease with some degree of scientific precision, I have collated the histories of forty cases which have been reported in various medical journals in English, German, French and Italian, and I have selected those, so far as I was able, in which the histories were fairly complete, but unless a person has made this attempt, he perhaps will not appreciate how difficult it is to obtain anything like systematic and thorough histories where the cases have been followed up to their termination. It is not pretended that these forty are all the cases which have been reported, but the results obtained from studying them will give a fairly good idea of the causes, the course, and the result in cystic disease of the testis.

Let us now analyze these forty cases before we pass on to the consideration of the pathology of this disease of the testis, and in the first place, in considering the question of *age*, we find that we have records in forty cases. Of these forty cases we find:

In four cases the disease occurred under 20 years of age; in thirty-two cases the disease occurred between 20 and 40 years of age; in three cases the disease occurred between 40 and 60 years of age; in one case the disease occurred between 60 and 80 years of age. It would appear, therefore, that this disease is one which occurs in early adult life, that is to say, between the ages of 20 and 40. In the tables it is noted that the youngest patient was aged three months, the oldest was aged 78 years.

As regards the *duration* of the disease, that is to say, between the times when the swelling was first noted by the patient, and the time when the tumor of the testicle was operated upon, it is observed that we have records in thirty-eight cases out of the forty. In these thirty-eight cases the disease had lasted:

Under 1 year in twenty-three cases; between 1 and 2 years in eight cases; between 2 and 3 years in four cases; between 3 and 4 years in none; and over 4 years in three cases. In one there is no record, and in one the statement is merely made that the disease was "slowly growing." We further observe that the longest period during which the disease was growing was twenty years, and the shortest one fifteen days. (Case No. 11.)

As regards the *cause*, we have a record in thirty-three cases out of the forty, and in these we note that seventeen occurred from injury. In fifteen there was no apparent cause. In one it is noted that there was gonorrhea and orchitis, the orchitis being apparently considered as the starting point of the disease; and in seven there is no statement made whatever.

As regards *pain*, we have a record in thirty out of the forty cases, and the figures are evenly divided, for in fifteen pain was present, and in fifteen pain was absent. It is noted, however, that there was a dragging sensation in ten.

As to the *side of the body* in which the swelling occurred, we have the records in thirty-seven cases. Of these, the right testis was affected in sixteen cases; the left testis in twenty-one. In three there is no record, so it would appear as though the left testis was implicated in 55 per cent. of the cases.

As regards the presence or absence of the *seminal tubules* in this class of disease, we have the record in thirty-six cases. Of these thirty-six cases, the testicular substance was present in thirty-one, and was absent in five cases. In four cases there is no record.

As regards the condition of the *epididymis*, we have the record in twenty-eight cases, and here again we find the figures equally divided, for in fourteen the epididymis was normal, in fourteen it was diseased, and in twelve no statement is made with regard to the condition of this portion of the testis.

The condition of the *spermatic cord* is noted in thirty-two out of the forty cases. In these thirty-two the cord was found normal in nineteen, diseased in thirteen, and in eight no statement is made as to the condition.

As regards the condition of the *tunica vaginalis*, we have a record in twenty-five cases. In these twenty-five cases, this tunica was found normal in eight and diseased in seventeen. In fifteen no statement is made as to the condition of the vaginalis.

The condition of the *tunica albuginea* is as follows: There is a record in twenty-five cases. Of these twenty-five cases the tunic was normal in four, was diseased in twenty-one, and in fifteen there is no record kept.

The *health* of the patient before operation is recorded in thirty-four cases. Of these thirty-four cases, twenty-four were in good health, four were in fair health, six were in poor health, and in six there is no record.

The nature of the *stroma* composing

these tumors is somewhat singular. We find it noted that:

Connective tissue was present twelve times;

Fibrous tissue was present twenty-seven times;

Cartilage was present eleven times;

Fibrous tissue and cartilage was present seven times;

Fibrous tissue with fusiform cells was present once;

Fibrous tissue with spindle-shaped cells was present once;

Myxoma was present three times;

Myxo-sarcoma was present once;

Sarcoma was present four times;

Carcinoma was present twice;

Elastic tissue was present twice;

Fibroma with nodules of round cells was present once;

Pearly nodules were present once;

Fibrous tissue containing tubes filled with ovoid cells once;

Fibro-gelatinous tissue was present sixteen times;

Fibro-cellular tissue was present once.

In three cases out of the forty there was no statement made at all as to the condition of the stroma. In many of the cases there were several different tissues found in the same tumor, thus, for instance, some were fibrous with sarcoma, some fibrous with cartilage, etc.

As regards *complications* which were present, we have the records in thirty-nine cases. Seven of these were complicated at the time of the operation. In thirty-two there were no complications or other disease beyond that of the testis. In one there is no statement. Of these seven cases in which complications were present:

One showed an abdominal tumor with edema and pain in the right leg, pain in the left groin running down the left thigh, cough with expectoration. No cancerous elements were found in the sputum. This case terminated fatally from exhaustion twenty-eight months

after the operation, and the result of the autopsy seemed to show enchondromatous infiltration of the internal organs. (Case No. 1.)

One showed an antecedent gonorrhea, with tight urethral stricture;

One showed inguinal abscess after operation;

One showed cardiac, renal and splenic disease and hernia;

One showed syphilis, with a fungating tumor of the leg;

One showed three small indurated glands in the left iliac fossa;

One suffered from collapse when the spermatic cord was cut, which was followed later in the course of the disease with abundant suppuration from the inguinal canal, and with high fever.

In the *results* of the disease, we have the records of only twenty cases. Of these twenty cases, thirteen terminated fatally. In seven there was no reference of the disease, but in these cases the length of time in which the patient was under observation after operation was very short and inadequate for a correct statement to be made. In twenty there was no history whatever after the patient left the hospital.

As to the *cause of death*, we have the record in thirteen cases, and in these thirteen:

Exhaustion was the cause of death in four cases;

Septicemia was the cause of death in two cases;

Abdominal tumor (sic) in three cases;

Cancer in three cases;

And in one case there is no statement as to the cause of death, but in the remarks it will be observed that secondary carcinomatous growths were present in the lungs, liver and bladder. One point is noteworthy: Of the twenty cases in which we have a record, death occurred in thirteen, a very large proportion to find in a disease which has heretofore been considered as practically benign.

and upon this point I shall revert again when I come to speak of the question of prognosis.

Nomenclature.—It will be noted that I have headed the paper, "A Cystoid Tumor of the Testicle," but in the report Dr. Sondern writes "with so varied a composition, this tumor undoubtedly belongs to the class of Teratoma of the Testicle," and it will be well worth discussing for a few minutes which of these two names is the more correct. I am free to confess that I think both are incorrect, or at least neither fully or accurately describes the character of the tumor. I, myself, am inclined to regard it as carcinoma of the testicle, and I prefer that name, because it gives a correct description of the nature of the tumor.

Let us compare the two definitions of teratoma and cystic disease of the testicle together, and to begin with teratoma. What is the meaning of the term? I will give three definitions: one from the English, one from the German and one from the French. The English definition is that of Mr. J. Bland Sutton, who writes as follows:

"Teratomata constitutes a class of congenital tumors composed of formed tissues derived from the epiblast and mesoblast, or from epi-meso- and hypoblast. They form three groups, distinct, not only in structural character, but also in their etiology:

"1. Dermoid cysts, arising from sequestered portions of the epiblast.

"2. Dermoid cysts and tumors arising in obsolete canals.

"3. Parasitic fetuses."

The German definition, and I take that given by Kocher, who says, "We can distinguish three forms of teratoma, one from the other, although the combinations are frequent, to wit: the dermoid, myxoid and organoid forms of teratoma," and that is all the definition he gives.

The French definition is that of

Monod and Terillon, which reads as follows:

"We should define as teratomata congenital cystic tumors with complex structure, in which are found most of the tissues derived from the three blastodermic layers."

Dr. Sondern, in his report, writes that Wilms states that these tumors should contain elements of the ectoderm (squamous epithelium as above); the mesoderm (cartilage, etc., as above); and of the entoderm (cylindrical epithelium and glandular elements as above).

Ziegler defines the word teratoma as follows:

"The word teratoma, or teratoid tumor, is applied to a peculiar sort of new growth which usually presents a complicated structure, and consists, at least in part, of tissues which do not normally occur at the site where the tumor is found."

If we take these several definitions, we find that they are divisible into two parts, one where the tissues composing the tumor are derived from the three blastodermic layers, either ecto-, meso- or endo-, the other consisting of organized material which is entirely foreign to the part, such as skin, hair, teeth, etc.; but one point to be noted in all these teratomata is that they are probably congenital or of congenital origin, for, although there are cases in which the disease has been found in early adult life, the majority of them occur in children, or at least, they commence during childhood, growing with the growth of the patient. If these above definitions be strictly followed, many of the tumors which we have heretofore classified under different names, such as the enchondromata and rhabdomyomata, would have to be classed as teratoid, for they contain tissue foreign to the part, and derived from one of the blastodermic layers.

Now, so far as the pathologist is concerned, the definition is perhaps a per-

fectly good one, but for the clinical surgeon it means nothing, and more than that, is misleading. It tells him nothing as to the probabilities of any given tumor being benign or malignant; it says nothing to him with regard to the question of prognosis, and furthermore, it really tells him very little as to the nature of the disease which he has to deal with. I should, therefore, incline to confine the name of teratoma to those cases in which there is organized tissue, or the remains of organized tissue, such as nerve cells, hair, teeth, bone, or any of those substances which contain a certain degree of organic growth, and which are of congenital origin, classifying the other tumors by the principal and most important element which enters into their composition.

Now, as regards the name, cystic tumor of the testicle, let us take the three national definitions, the English, German and French, and for the English we will take Curling, whose classical work on Diseases of the Testis has not yet been supplanted in the English language. In the third and last edition of his work, he speaks of cystic disease of the testicle as follows:

"In this rare affection, commonly called cystic-sarcoma, a tumor formed of compound or proliferous cysts is developed in the testicle."

The German, Kocher, limits the name of cystoma to "those multilocular kinds in which the formation of cysts is not associated with any other new tissue formation. (*Kystoma Simplex*.)"

Conche, the Frenchman, says that under the name of cystic tumors of the testicle, we should "designate those tumors which are made up of a fibrous stratum of new formation which is riddled with a number of cysts, more or less numerous, and which can be accidentally complicated by the presence of cartilaginous, cancerous or tubercular matter."

Of these three definitions, that of Kocher I believe to be the correct one. Curling's and Conche's definitions I regard as absolutely incorrect. The true cyst of the testicle is not composed of any new formation. Its stroma, if any be present, is made up of the natural elements of the parts, and the cysts, of which there are usually one, or at the most, two, are due to the breaking down of the normal tissue of the part, and in such tumors there are found no elements foreign to the tissues natural to the part, either benign or malignant in character. Such a case is given in the table, No. 34, in which the tumor contained only clear transparent fluid, without cells or crystals, and in which the cysts were found to be lined with pavement epithelium, with some nuclei, but in which there were no traces whatever of the normal tissue of the testis. Such cases are, I believe, very rare, in which view I am supported by Kocher, who says that the simple cystoma is a rare tumor, and there is no doubt that a portion of the purely anatomical cystoma belongs, as has before been mentioned, to other tumors, the tissue of which has been destroyed by the pressure of the fluid. The moment other tissues occur, fibrous, sarcomatous or cartilaginous, the disease then, to my mind, loses its right to be considered as a cystoma, no matter how many cysts may be present. I believe that oftentimes the cysts are formed by breaking down of tissue which originally was solid, due either to pressure or to some destructive action taking place within the stroma of the tumor itself. In the large majority of cases, then, I believe that these cysts are only a certain stage in the course of the disease, and should not be considered as a morbid entity; for, while I do not deny the existence of a true cystic disease of the testicle, I believe it to be an exceedingly rare affection, and the cases which I have collated, with the sole exception

mentioned, should not, I believe, be regarded as cystic disease of the testis. What then shall we call these various tumors? The clinical surgeon needs some name that will tell him the predominant and most important element in the disease which he has under consideration, and I should therefore name it from the most malignant tissue present, for that, after all, is the touchstone. We want to know whether such and such a disease is malignant or not, and where we have to deal with a tumor, such, for instance, as the case personal to myself, in which so many elements occur, I should incline to call it carcinoma, for that is the most important of all the tissues which enter into the composition of this tumor. Next to that comes the cartilage, or perhaps, we may say that the sarcoma and the cartilage are the two next important ones. The adenoma is of small importance, but it is of vital interest to both patient and surgeon to know that there are elements in this tumor which are dangerous, and which bode ill for the future. Surgeons and pathologists have argued this question without settling it, and, of course, all that I advance here is merely a personal opinion, but one I believe to be founded upon practical lines.

Pathogenesis. — Upon this question there has been and still remains a decided difference of opinion. The English and German observers assign one cause, the French another as the starting point of this disease of the testicle. Sir Astley Cooper, in the early part of the century, was the first one to describe this disease, which he called the Hydatid or Encysted Disease of the Testis, and he believed that the starting point of this disease was in the seminal tubules, and was "formed of enlarged and obstructed seminiferous tubes." Mr. Curling combats this view, although at first inclined to agree with Sir Astley Cooper's opinion, and the ground of his difference was that the

tubuli seminiferi were found in nearly all of these cases in a healthy condition, forming a layer spread over the morbid mass. A case, however, came under his notice, which he believed solved this question as to the origin of these cysts of the testis. The case was, briefly, that of a man aged 37, who consulted him on account of an enlargement of the testis, and in whom the testis was removed. He writes:

"On making a section of the tumor, I found a thin layer of the brown tubular structure of the testicle spread over a part of the surface just beneath the tunica vaginalis reflexa, but the mass was principally composed of a multitude of small cysts, varying in size, and in the nature of their contents. * * * * Thin slices of the tumor being examined under the microscope, the origin of the cysts in a dilatation of the tubes was clearly made out, thus in some specimens (Plate III., Figs. A, B,) a tube could be traced to a termination in a dilated pouch. In others, the cysts appeared to arise from a lateral dilatation of the loop, as in Fig. C, whilst in others the dilatation appeared to be uniform, as in Fig. D. These dilated cysts and tubes were lined by a tessellated epithelium, and many of them contained a dark granular matter. (Figs. A, B, C, D.) The opaque whitish substance found in several of the larger cysts consisted of a mass of modified epithelial scales (Fig. E). The cysts containing this white matter were firmer and denser than the others. No spermatozoa were detected in any of the cysts or morbid tubes.

"This tumor must be regarded as the ordinary cystic disease, and the minute examination fully establishes the origin of the cysts in the morbid condition of the ducts. The circumstance of the healthy tubular structure being found external to the morbid growth, or extended over its surface, an arrangement which I had long ago marked as occurring in the cystic testicle, shows that the ducts affected are not in the tubuli seminiferi. If the latter were the seat of the disease, we should expect such of the ducts as remained sound to be pushed to one side, or at any rate near or mixed up with the diseased ducts, and not spread over the surface and distinctly separated from the morbid growth. Nor can the diseased ducts be those of the epididymis. In the examination of several cystic tumors of the testicle I have found this part quite unaffected, whilst in others it has been

wasted and lost in the morbid mass. If the disease sprang from the ducts of the epididymis, the glandular structure of the body of the gland, if not destroyed by pressure, would certainly be found in a mass enclosed in its own tunic, distinct from the morbid growth, and not spread over the surface. It being clear that neither the tubuli seminiferi nor the ducts of the epididymis are the tubes which undergo these changes constituting the cystic disease its seat may be considered as conclusively traced to the ducts of the rete testis. Why these ducts alone are subject to the marked change, I confess my inability to explain."

In this view the German writers, Virchow and Billroth among others, generally concur, and Billroth in his published case, No. 7, gives a drawing of a seminal tube terminating in a bulb or cyst, similar to what Curling shows in his paper, and this view is the one accepted by a certain number of medical writers on this subject. The French, however, dissent from this view, and have offered various other explanations to account for the presence of the disease.

Robin considered that this disease springs from the ducts of the epididymis, the tumor, working its way through the mediastinum testis and pushing the seminal tubules before it, occupies the cavity of the testis. This view, however, seems hardly tenable in view of the fact that in the large proportion of cases the epididymis is not implicated, and where it is affected, it is atrophied from pressure, or else disappears by absorption into the rest of the tumor.

Another Frenchman, Jouon, considered that the inner layer of the tunica albuginea was the seat of the disease, but that view has pretty generally been abandoned, even by the French writers.

The other views are those of Trélat, Conche and Malassez. The first of these considered the cysts as made up of entirely new tissue, giving rise to a neoplasm, which invades the substance of the testicle and pushes it little by little away.

Conche considers that the cystic disease of the testicle is seated anatomically, and starts from the mediastinum testis in the connective tissue, which, in that body, unites together the seminiferous tubules, while Malassez considers it probable that the intertubular connective tissue of the testicle is the point of origin of these tumors. He combats Curling's view upon the broad ground that he has never been able to observe any case in which a dilated tubule was converted into a cystic cavity, or in which the transition took place between the two. He further considers that this dilatation of the seminal tubules is an error of vision, which is due merely to a general resemblance in form. It seems difficult to reconcile this view with the statements made by Curling and Billroth.

There is one point upon which Malassez laid stress, and which seems to me deserving of notice, to wit, that in the cavities, even the smallest, there is found an epithelial lining which is entirely different from that which exists in these parts in a normal condition, and it is this peculiar lining of the epithelium, which can be seen in consulting the table, apart entirely from the presence in the stroma of formation foreign to the tubules themselves, which makes this class of disease peculiarly difficult of study. Personally, I am inclined to believe that there is truth in all of these theories. Where we have to deal with a true cyst, the kystoma simplex of Kocher, I think it highly probable that it may start in the tubules of the rete, possibly in some of the seminal tubules in the testis itself, but I believe that many of these composite tumors, although called cystic tumors of the testicle, are really other diseases. In these we have the starting point in the testis itself, and entirely outside of the tubules, where it begins as a new formation, being first composed of tissues which are seemingly simple, constituting what is known as a

benign tumor, and afterward undergoing some degenerate change which entirely alters its character, when it then passes over into the category of so-called malignant tumors, and this seems to have some possible support in the fact that quite a considerable number of tumors which have been recorded as benign, such as Nos. 1, 7, 8 and 10 in the table, have afterward been followed by general infiltration of malignant growths, causing the patient's death. Be it as it may, the question of the origin of these tumors is yet far from being settled, and as matters stand at the present, I do not believe that we can regard any one of the theories which are yet advanced as the correct solution in determining the pathogenesis of this class of disease.

Age.—Although I have given very hurriedly in a former portion of this paper a generalization of the various headings in the tables, there are a few points which I think will repay a little further consideration, and of these the question of age is interesting.

This class of disease is essentially one which occurs in early adult life; thus, the tables give thirty-two out of forty cases as occurring between the ages of 20 and 40 years, and out of these thirty-two, seventeen occurred between the ages of 20 and 30. In Conche's figures, the proportion is even larger, for in twenty-one cases which occurred between the ages of 20 and 40, fifteen occurred between 20 and 30. In my tables, the oldest one is noted at 78, but Sir Astley Cooper, on the authority of Conche, mentions one patient who was 90 years of age. On consulting Sir Astley's work, I have not been able to verify this statement.

Duration.—This disease apparently is one of rapid growth. In my table of cases I have a record of thirty-eight cases out of forty, and of these thirty-eight, the disease was sufficiently dangerous and annoying to require operative interference within one year after it was first

noticed in twenty-three cases. The longest period of growth mentioned is that of twenty years, but that is exceptional. Of the remaining fifteen cases, the disease necessitated an operation within three years in twelve. In Conche's statistics, which include twenty-three cases, in nine of the twenty-three the disease required surgical intervention in less than a year from the time it was first noticed, not more than two years in nine cases, and under five years in five. We may say then that it is a disease of rapid growth, and is usually attended with but little

Pain.—In my figures it is stated that in a record of thirty out of forty cases, pain was present in fifteen and absent in fifteen, while in the remaining ten it was noted that there was dragging sensation, but this question of pain, when put in a statistical form, is somewhat misleading. My experience has been that the larger proportion of cases are attended with pain in the early stages, and this is invariably the case if the disease is due to an injury. When it is not due to an injury, in a large proportion of cases it commences with severe pain, which does not, however, last for any length of time. In the minority of cases only, it is that the sensation of aching and dragging is the only symptom which calls the patient's attention to the parts. Pain, then, in the greater proportion of cases, begins the disease. Then comes a period in which the pain is absent. Not infrequently it starts up again, particularly before an increase in the size, sometimes dependent upon injury, but more often not, as in my reported case the pain returned after a salt-water bath, perhaps due to the muscular exertion of swimming. As the disease progresses the pain disappears, not only in the quiescent stage, but even if the part be roughly handled; and then, the organ having attained a large size, begins to drag upon the cord in consequence of its weight and size.

The Testis.—Nearly all writers say that there seems to be no preference as to which testis is attacked. Conche gives nineteen cases in which there is a record, in ten of which the right testis was attacked, in nine the left. In my own figures, I have a record of thirty-seven, in sixteen of which the right is attacked, and in twenty-one the left, making the left testis the seat of disease in about 56 per cent. of the cases.

The Size of the tumor varies very much. In my set of figures it is impossible to draw any correct conclusion, because in some the figures refer to the circumference and in some to the diameter, but it may grow to a very large size. The largest tumor of this kind of which I have found any record is reported in the *Dublin Medical Press*, for 1862, by Dr. Hughes. In this the tumor measured 55.8 cm. in circumference, its long diameter was 17.8 cm., and its short diameter 14.6 cm.

The Weight also varies. The heaviest one so far as I have been able to find out is the one mentioned above, which weighed 2,267.95 grm., the next heaviest being one which was excised by Mr. Hancock, and weighed 1,984.40 grms.

Testicular Substance.—This is present in the large proportion of cases, and it is only when the tumor becomes of very great size that the seminal tubules disappear, probably from atrophy by pressure.

Epididymis.—In my figures, out of twenty-eight recorded cases the epididymis was diseased in one-half, viz.: fourteen, but in the earlier stages of the disease neither the epididymis, the spermatic cord, nor the tunics are materially altered. It is only as the disease progresses that these parts undergo any change, when the epididymis may entirely disappear, either by atrophy, or else by fusion with the tumor.

Stroma.—This varies very much. In

nearly all of the cases in my table fibrous tissue is present, intermixed with myxoma, sarcoma, cartilage and carcinoma; indeed, it may be said that this class of disease is peculiarly characterized by its heterogeneous elements.

Spermatic Cord.—In thirty-two cases this was found normal in nineteen and diseased in thirteen, but in this, as in the epididymis, during the early stages the spermatic cord does not seem to be implicated. In my reported case, it is worthy of note that up to the last month the cord did not seem to be implicated, but in the month preceding the operation, and during the time when there seemed to be an exacerbation of the disease, the cord became implicated, and the extension of the disease to this portion of the testicle was exceedingly rapid. In that four weeks 6 cm., or about 2½ inches of the cord, became implicated, when prior to that month the cord was perfectly sound, and could be traced down to its origin in the epididymis.

Patient's Health.—This, oddly enough, seems, as a general rule, to be good, for in the thirty-four recorded cases, it is good in twenty-four; fair in four; and poor in six, and if we include the fair and good together, we have twenty-eight out of thirty-four in which the patient may be considered in good condition.

Condition of the Tunics, the Albuginea and Vaginalis.—There seems to be a tendency towards disease in both of them. We have the records in twenty-five cases; the albuginea was normal in only four, and the vaginalis in eight, the larger proportion of the cases showing an extension of disease to both these tunics.

Contents of Cysts.—This varies very much, from a thin, serous, transparent and but slightly colored fluid, to a thick, grumous, viscid mass, semi-solid in consistence, and evidently the result of some necrotic process. Sometimes the interior

is solid, being cheesy in character, but I believe that with the sole exception of the few cases where the fluid is thin and serous, the contents are due to breaking down of tissue.

The lining membrane of the cysts is one other point to which I would call attention. One thing that strikes us immediately is the heterogeneous character of the lining of the tubules and cysts. We find epithelium of all kinds, tessellated, cylindrical, ciliated, columnar and spherical, mixed up with molecular detritus, fat globules, spindle-shaped cells with nuclei, round cells, the so-called "pearly bodies," free nuclei, cells having a carcinomatous look, sarcoma cells, together with epithelial outgrowths, and sprouts of granulation tissue, which spring from the walls of the cysts into these cavities, together with blood corpuscles and cheesy, necrotic matter. In fact, the lining membrane of these cysts and the contents are of the most varied description, and would appear to be made up of almost every variety of cellular growth. In none of these cysts have spermatozoa been found.

Diagnosis.—The diagnosis in these cases is by no means easy to arrive at. The patient presents himself with a tumor of the testis, which is ovoid, elastic and sometimes slightly translucent. It resembles a hydrocele, and yet it is clear that the entire sac is not filled with fluid. Light is transmitted through it in only certain portions, and if an exploratory puncture is made, not infrequently no fluid follows. Occasionally a small amount of fluid is evacuated, and the tumor may become slightly smaller, but the body of the testis cannot be made out as it would be if the case were one of pure hydrocele. Sometimes the tumor is quite firm, so much so as to give one the impression of a carcinoma or an enchondroma, and yet the patient's general appearance would be rather against the likelihood of either of the two dis-

eases. Indeed, one is at times almost reconciled to retaining the name, cystic disease of the testicle, for any and all of these doubtful cases, as a convenient cloak for ignorance, and in order to give this unknown disease a local name; and the more one sees of this class of disease, the more one feels the truth and cogency of Sir Astley Cooper's statement: " * * * I do not believe that the most extended experience, or the nicest and most minute manipulation can entirely prevent the liability to occasional mistake in the diagnosis. * * *"

Course.—The course of the disease may be briefly stated as one of progression. So far as I have seen or read of this class of disease, it does not end in resolution; on the contrary, the tendency is towards increase in size, and very probably towards metastasis of the growth elsewhere.

Prognosis.—If the question of diagnosis is one of difficulty, that of prognosis is still more so. Tumors have been excised which presented, so far as the local manifestations were concerned, every symptom of being benign, and yet the termination has been fatal. To take but one case from our tables, let us look at Billroth's case (Table No. 7), which is reported in Virchow's Archiv. The disease occurred in a man 34 years of age, and was of fourteen months' duration. The patient's health was good, and so far as the question of operation went, nothing could have been better. The tumor was a large one, 13 cm. long, with a breadth of 7.5 cm. The contents of the cysts showed clear serous fluid, and a thin, sticky, mucous secretion. The epididymis had become also cystic, but the conditions of the tunics were normal, and the stroma was purely fibrous. There were no cells that should cause any alarm, or that would indicate a malignant character; there were no complications, and the lining of the tubules and cysts showed molecular detritus, fat

globules, round cells, cylindrical and pavement epithelium. There was everything in this tumor to indicate a benign character, and yet in five weeks after the time of the operation the patient died of septicemia, and at the autopsy was found peritonitis, with intestinal adhesions between the various portions of the intestines and the abdominal walls. Lying under the intestines was a fluctuating tumor as large as a goose's egg, springing from the vertebral column. The peritoneum covering the tumor was much thickened; the vertebræ were sound. Microscopical examination showed undoubted carcinoma. In view of such a termination, one is tempted to echo the words of Billroth: "The cysts of the testis cannot be absolutely regarded in the light of benign tumors."

In looking at the tables, we note that in the forty cases we have the records in twenty where the further history after operation is given. In these twenty, thirteen deaths occurred, and in seven no recurrence of the disease is noted; but in many of these latter cases the length of the time which has elapsed since the operation is altogether too short, because in some instances the fatal termination has not taken place until a year or more after the operation. Thirteen deaths in twenty cases is a large proportion of deaths, and it is quite likely that the proportion would have been still larger if the history of those seven in which there has been no recurrence of the disease could have been followed up for a couple of years after the operation.

Is it possible to assign any limit as to the time in which any given tumor of the testicle is likely to prove fatal or otherwise? In my table of cases, out of thirteen deaths, we have a record of nine in which the date of death after the operation is stated. In those nine the longest time mentioned is thirty months—two and one-half years; the shortest, fifteen

days. It is evident then that the patient may live between two and three years from the time of his operation before a fatal termination occurs, but beyond that we are unable to say anything, for to take the mean duration of life as shown by these tables would be of little service. Still, I should incline to the belief, speaking generally, that if a patient survived the operation two years, the probabilities would be strongly in favor of the disease of the testis being of a benign character, for my impression is that in the majority of cases there are evidences of malignant disease elsewhere, even should not death intervene, within two years.

The Treatment is simple, to wit: the knife. No internal methods of treatment have so far proved of any service, and the only thing to do is to recommend the patient to part with his diseased organ as speedily as possible, for the longer the delay, the greater the danger of possible extension, and perhaps absorption of the disease, from the localized point to internal organs elsewhere.

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A careful examination of the tables of cases which follow, beginning with the next page, will amply repay study in connection with the printed matter in the text. [F. R. S.]

TABULATED STATISTICS OF FORTY CASES

References.	Age of Patient.	Duration of Disease.	Health before Operation.	Cause.	Size of Tumor.	Pain.	Which Testis.	Operation.	Result of Operation.	Nature of Tumor. Gross Appearances.	Contents of Cysts.	Layer of Test. Subst. over Tumor.	Condition of Epididymis.	Condition of Spermatic Cord.
(1) De Morgan. Transac. Path. Soc., Lond., 1867.	35	8 mos.	Generally good.	Bruise.	14 cm. in L. diam.	None.	R.	Ablation.	Successful.	Cysts.	Fluid; partly limpid and clear, straw colored or dark and thick like pus and blood. Granules. Corp. like mucus; nuclei; oil glob. and blood corp.	Yes.	Not stated.	Not stated.
(2) F. M. Caird. Edinburgh Med. Journal, Nov., 1885.	24	16 mos.	Good	Followed a blow.	Length, 9 cm.; width, 5 cm.; breadth, 6.5 cm.	No.	L.	Ablation.	Successful.	Oval, firm, elastic; slightly bosselated.	Small quantity serous fluid.	Yes.	Slightly flattened.	Normal.
(3) Athol Johnson. Transac. Path. Soc., Vol. 7, 1855.	2 yrs. 9 mos.	2 yrs. 6 mos.	Good	None apparently. Probably congenital.	16.5 cm. by 19 cm. in circumference.	Slight.	R.	Ablation.	Successful.	Oval; generally smooth. Slight fluctuation in spots.	Clear, glairy mucus; almost colorless.	Yes.	Slightly flattened.	Normal.
(4) Jabez Hogg. Transac. Path. Soc., Vol. 4, p. 186.	30	17 mos.	Not stated.	Blow.	"Exceedingly large." Weight, 1,984 gms	Yes.	L.	Ablation.	Successful.	Smooth, elastic. Cysts.	Coagulated blood. Fibrin. Clear serum.	Yes.	Not stated.	Not stated.
(5) Nepveau. "Soc. Anatom." 1870, p. 66.	28	11 mos.	Good	Blow, and subsequent friction of clothes.	Fist.	No.	L.	Ablation.	Successful.	Ellipsoid resilient. Few soft spots. Cysts.	Clear, serous fluid. Also thick, gluey matter.	Yes.	Not stated.	Normal.
(6) Billroth. Virchow's Arch. Bd. 8, s. 433.	25	3 mos.	Physically weak and anemic.	Not stated.	Goose egg.	More discomfort than pain.	R.	Ablation.	Not stated.	"Cysts." Soft and fluctuating in places.	Sero-sanguinolent fluid.	Yes.	Apparently not diseased, but fused with testis.	Healthy.
(7) Billroth. Virchow's Arch., Bd. 8, s. 270.	34	14 mos.	Good	None apparent.	Ovoid. Length, 13 cm.; breadth, 7.5 cm.; thickness, 5.5 cm.	At first but not later on.	R.	Ablation.	Septicemia.	Elastic and fluctuating. Cysts.	Clear, serous fluid. Also sticky, thin mucous secretion.	Yes.	Cystic.	Not stated.

OF CYSTIC DISEASE OF THE TESTIS.

Condition of Tun. Vag.	Condition of Tun. Alb.	Nature of Stroma.	Complications.	Cartilage.	Musc. Tissue.	Bone.	Carcinoma.	Sarcoma.	Adenoma.	Lining of Tubules and Cysts.	Cause of Death.	Time of Death after Operation.	Result of Autopsy.	Remarks.
Cavity oblit. Post. and ant. layers separated by thick, coag. and fibrin layers.	Not stated.	Connective tissue.	Abdom. tumor. Edema and pain in R. leg. Pain in L. groin, running down L. thigh. Cough with expect. No cancer element in sputum.	Yes	No.	No.	No.	No.	No.	"Epithelial." (sic?)	Exhaustion.	28 mos.	Cystic dis. of lungs, mesenteric and lumbar glands. Cysts of the lungs, contained cartilage with clear, viscid fluid. In R. groin a cystic tumor with cartil. stroma near upper part of R. sperm. cord. Cord healthy; do. opposite test. and glands in L. groin.	
Normal.	Thickened.	Fibrous and cartil	No.	Yes	No.	No.	No.	No.	No.	Chiefly tessellated. A few cylindrical epithelia; cholestomata.				
Contains 3 small cysts.	Normal.	Fibrous tissue.	None.	No.	No.	Yes. "Osseous spiculae."	No.	Yes	No.	Ciliated columnar and tessellated epithelium. Spindle shaped cells with nuclei.				Apparently no relapse or further trouble.
Not stated.	Not stated.	Not stated.	None.	Yes	No.	No.	No.	No.	No.	Circular, ovoid and elongated cells.				
Normal. Small quantity of fluid.	Not stated.	Fibrous. Some fusiform cells.	None.	Yes	No.	No.	No.	No.	No.	Cysts lined with pavement epithelium and "pearls."				No further history.
Not stated.	Not stated.	Fibrous tissue and spindle shaped cells.	Antecedent gonorrhea with tight urethral stricture.	Yes	Striped muscle.	No.	No.	No.	No.	Epith. vegetations, tessellated and columnar epith. round nucleated cells				Wound healed inside of 6 weeks. Up to that time condition good. No further history.
Normal.	Normal.	Fibrous	None.	No.	No.	No.	No.	No.	No.	Molecular detritus, fat globules, round cells, cylindrical and pavement epithelium.	Septicemia.	5 weeks.	Peritonitis with intestinal adhesions between various portions of the intestines and the abdominal walls. Lying under intestines was a fluctuating tu nor springing from the vertebral column as large as a goose's egg. Peritoneum covering tumor much thickened. The vertebræ were sound. Microscopic examination showed undoubted carcinoma.	

TABULATED STATISTICS OF FORTY CASES OF

References.	Age of Patient.	Duration of Disease.	Health before Operation.	Cause.	Size of Tumor.	Pain.	Which Testis.	Operation.	Result of Operation.	Nature of Tumor. Gross Appearances.	Contents of Cysts.	Layer of Test. Subst. over Tumor	Condition of Epididymis.	Condition of Spermatic Cord.
(8) Conche. Mal. Kyst. d. Testic. Mem., etc., d. I. Soc. d. Sci. Med. d. Lyon, 1865.	27	6 mos.	Good	None apparent.	Weight, 125 gms.; length, 7 cm.; breadth, 6 cm.	No.	R.	Ablation.	Successful.	Firm, non-fluctuating, cystic; no adhesions.	Serous, sero-sanguinol; some with fatty yellow contents; others with white pearly contents	Yes.	Healthy.	Healthy.
(9) <i>Idem.</i>	25	2 yrs.	Good	Heat of climate; friction of trowsers.	Ovoid. Weight, 235 gms.; length, 12 cm.; breadth, 13 cm.	At first severe pain on press.; later on no pain, but sense of weight and drag on cord.	L.	Ablation.	Successful.	Firm, fluct., cystic. No adhesions; small masses of yellow gelat. matter, recognized as fibrous tissue in process of development.	Albuminous liquid, semi-liq. yellow fatty matter and solid material having form and color of pearls.	Yes.	Healthy.	Healthy. Veins varicose.
(10) <i>Idem.</i>	25	8 mos.	Good	Bruise.	Ovoid. Weight, 410 gms.; length, 15 cm.; breadth, 13 cm.	Usually none; occasional sharp, lancinating pains; sense of weight and drag on cord.	R.	Ablation.	Successful.	Firm, fluctuating, cystic; slight pit. on pressure.	Serous and sero-sanguinol; albuminous fluid; also small spherical masses of pearly white color.	Yes.	Healthy.	Healthy. Veins varicose.
(11) <i>Idem.</i>	27	1 yr.	Good	None apparent.	Size of fist.	Sense of weight and drag on cord.	L.	Ablation.	Successful, but complicated with severe hemorrhage and an inguinal bubo.	Generally firm, with a few soft spots. Exploratory puncture, negative cystic.	1. Liquid, sometimes transparent; also orange or chocolate color and thin. 2. Transparent and gelatinous, containing fusiform bodies with amorphous matter.	Yes.	Atrophied.	Atrophied
(12) Conche. (<i>op. cit.</i>)	29	5 yrs.	Good	Gonor. orchitis(?) of 5 yrs.; standing when testis began to swell.	Not stated.	No; except at lower part. There pain on press.	L.	Ablation.	Successful.	Firm, resilient; at few points pits on pressure. Cysts.	Serous fluid, orange colored.	No seminal canals found.	Atrophied.	Atrophied at lower part.
(13) <i>Idem.</i>	27	7 mos.	Fair.	Not known. Slow and progressive.	Piriform. Length, 16 cm.; width, 8 cm.; circumference, 27 cm.	No, but a sense of weight and dragging on cord.	R.	Ablation.	Successful.	Firm; resilient. Cysts.	Some serous and fluid; some albuminous with white, pearly contents. Also gelatinous matter composed of fibrous material in process of development.	Yes; epithelium lining tubes fatty.	Commenc. atrophy.	Commenc. atrophy.

CYSTIC DISEASE OF THE TESTIS (Continued).

Condition of Tun. Vag.	Condition of Tun. Alb.	Nature of Stroma.	Complications.	Cartilage.	Musc. Tissue.	Bone.	Carcinoma.	Sarcoma.	Adenoma.	Lining of Tubules and Cysts.	Cause of Death.	Time of Death after Operation.	Result of Autopsy.	Remarks.
Not stated.	Normal.	Fibrous connective tissue.	None.	No.	No.	No.	No.	No.	No.	Not stated.	Abdom. tumor.	1 year.	No autopsy.	Regarded as benign fibroma.
Normal. Held 3ii of serum.	Thinner than normal.	Fibrous connective tissue.	None.	No.	No.	No.	No.	No.	No.	Conical and pavement epithelium; nuclei; epidermal where cyst; contents solid.			None.	Regarded as benign fibroma. No relapse nor subsequent symptoms. Time after operation not given. It is noted that sexual functions are preserved.
Normal. Slight amount of serum.	In some places thinner, in others thicker than usual.	Fibrous connective tissue; white, resilient.	None.	No.	No.	No.	No.	No.	No.	Fine, transparent layer of conical and pavement epithelium where contents liquid; epidermis where contents solid.	Abdom. tumor.	11 mos.	Carcinomatous infiltration of lumbar ganglia.	Regarded as benign fibroma. No evidences of malignant growth in testis.
Adhesions between the two layers.	In some places thinner, in others thicker than usual.	Fibrous connective tissue; white, resilient; creaks under knife.	None.	No.	No.	No.	No.	No.	No.	Not stated.			None.	Sexual functions preserved. When last seen, 6 weeks after the operation, health was good.
Normal.	Thin in spots.	Fibrous connective tissue; white.	None.	No.	No.	No.	No.	No.	No.	Not stated.			None.	Left hospital one month after operation. Health then good. Lost sight of.
Normal. Small amount of serum.	Few spots of thickened; otherwise normal.	Fibrous and cartil. Yellowish white color. Vascular.	None.	Yes	No.	No.	No.	No.	No.	Spherical and spindle shaped epithelium with free nuclei. Some cells granular and fatty.			None.	The cartil. nodules were imbedded and developed in the fibrous connective tissue. When seen one year after operation was in good health. Q. Were the spindle shaped cells sarcomatous? (F.R.S.)

TABULATED STATISTICS OF FORTY CASES OF

References.	Age of Patient.	Duration of Disease.	Health before Operation.	Cause.	Size of Tumor.	Pain.	Which Testis.	Operation.	Result of Operation.	Nature of Tumor. Gross Appearance.	Contents of Cysts.	Layer of Test. Subst. over Tumor.	Condition of Epididymis.	Condition of Spermatic Cord.
(14) <i>Idem.</i>	37	8 yrs.	Poor.	None apparent. Slow and progressive.	Ovoid. Length, 10 cm.; thickness, 9 cm.	No.	L.	Ablation.	Immediate result successful.	Dense and firm. Resilient. At few points pits on pressure. Cysts.	Red in color. Some cysts are semi-solid; some have sero-album. others sero-sanguin. contents. A few contain a white pearly matter.	No seminal canals found.	Hard, nodular and swollen.	Hard and swollen.
(15) Hertaux. Mem. de la Soc. d. Chir. d. Paris, 1868.	37	9 mos.	Good	None apparent.	Length, 8 cm.; width, 5 cm.; breadth, 6 cm.	No. Discomfort from weight.	L.	Ablation.	Successful.	Ovoid, smooth, elastic. Cysts.	Transparent serum except one, which contained grumous, opaque semi-fluid substance.	Yes.	Normal.	Normal.
(16) Richon. Bull. Mem. de la Soc. de Chirurgie, 1883.	22	6½ mos.	"Perfect."	Appeared after blow.	Length, 11 cm.; width, 6 cm.; breadth, 6.5 cm.	Yes.	R.	Ablation.	Successful.	Ovoid, elastic, smooth. Pits on pressure at spots. Cysts.	Some fluid of gelatinous consistence and clear; some fluid dark, like chocolate; some thick and amber-colored; some gelatinous, like cartilage.	Slight and atrophied. Filled with cells.	Fused with testis. Fibrous degeneration.	Slightly thickened at junction with testis; otherwise normal.
(17) R.W. Parker. Trans. Path. Soc., Vol. 36, 1885.	3 mos.	Congenital.	Good	None apparent.	Hen's egg.	No.	L.	Ablation.	Successful.	Smooth, elastic, slight fluctuation. Cysts.	Glairy, semi-transparent fluid.	None could be found.	Blended with testis.	Normal.
(18) S. Q. Silcock. (<i>Idem.</i>)	8 mos.	Congenital.	Not stated.	None apparent.	Three or 4 times larger than normal.	No.	L.	Ablation.	Successful.	Ovoid, smooth, non-transparent.	Not stated.	Not stated.	Healthy.	Thickened.
(19) Paget. Med. Times and Gazette, 1852, 1855.	58	20 yrs.	Good	Aet. 9, a blow; aet. 25, gonorrhea.	Two fists.	No. Discomfort from weight.	R.	Ablation.	Successful.	Cysts. Oval, firm, inelastic.	Clear, serous fluid.	Yes.	Not stated.	Normal.
(20) Curling. Med. Chir. Trans. Vol. 36.	37	7 mos.	Unhealthy aspect.	Not stated.	Four times natural size.	Not stated.	Not stated.	Ablation.	Successful.	Firm, with fluctuation. Cysts.	Transparent, limpid fluid. Bloody fluid. Solid white opaque matter.	Yes.	Not stated.	Healthy.
(21) Eve. Trans. Path. Soc. Lond., 1897.	40	Slowly growing.	Not stated.	Not stated.	Not stated.	Not stated.	Not stated.	Ablation.	Successful.	Cystic. Fibroma.	Not stated.	Yes.	Not stated.	Not stated.

CYSTIC DISEASE OF THE TESTIS (Continued).

Condition of Tun. Vag.	Condition of Tun. Alb.	Nature of Stroma.	Complications.	Cartilage.	Musc. Tissue.	Bone.	Cardioma.	Sarcoma.	Adenoma.	Lining of Tubules and Cysts.	Cause of Death.	Time of Death after Operation.	Result of Autopsy.	Remarks.
Normal; small amount of serum.	Thin over larger cysts.	Fibrous connective tissue.	Inguinal abscess after operation.	No.	No.	No.	Yes	Probably.	No.	A thin, transparent membrane lined with epithelial and spherical cells, irregular in shape, multinuclear, filled with fatty and granular detritus. Cells are carcinomatous in look.			None.	About six weeks after operation went home. Four and one-half months after the operation he suffered from renal and lumbar pains, and an abdominal tumor could be felt. Another tumor was noticed, which, starting from the cicatrix of the scrotum, occupied the entire perineum. "Very pronounced cancerous cachexia and approaching death."
Thin. Small quantity of fluid.	Thin.	Fibrous, containing tubes filled with ovoid cells.	None.	Yes	No.	No.	No.	No.	No.	Spherical pavement and cylindrical epithelium; fat globules and pearly bodies.				Left hospital in good health 16 days after operation. No recurrence of disease then. No subsequent history.
Two layers adherent.	Not stated.	Fibro-gelatinous and myxomatous	None.	Yes	Not stated.	No.	No.	No.	No.	One layer of columnar or several layers of epithelium, of which inner were flattened, middle "prickle" cells, and outer cylindrical.				Finished term of service. No recurrence of disease 2 years and 3 mos. after operation.
Normal.	Not stated.	Patches of myxomatous tissue.	None.	Yes	Unstriped muscle around tubules.	No.	No.	Yes	Yes	Cylindrical epithelium.				Child living, but no further history given.
Healthy.	Not stated.	Spindle celled and myxosarcoma.	None.	No.	No.	No.	No.	Yes	No.	Tubules scattered in sarcomatous stroma.				Child left hospital without any recurrence of trouble. No further history.
Not stated.	Normal.	Fibrous	None.	No.	No.	No.	No.	Yes	No.	Tube-like spaces filled with small spheroidal epith. which for most part had disappeared				Patient in good health 12 months after operation.
Not stated.	Not stated.	Fibrous tissue.	None.	No.	No.	No.	No.	No.	No.	Tesselated epithelium and granular matter.				Tumor developed in rete testis. Health continued good. No further history.
Not stated.	Not stated.	Fibrous, but many nodules of round cells.	Not stated.	Yes	No.	No.	No.	No.	No.	Ciliated columnar, sub-columnar or cubical epith. Solid buds of epithelium springing from tubules.				Patient in good health 4 years after operation.

TABULATED STATISTICS OF FORTY CASES OF

References.	Age of Patient.	Duration of Disease.	Health before Operation.	Cause.	Size of Tumor.	Pain.	Which Testis.	Operation.	Result of Operation.	Nature of Tumor. Gross Appearances.	Contents of Cysts.	Layer of Test. Subst. over Tumor.	Condition of Epididymis.	Condition of Spermatic Cord.
(22) Sir H. Thompson, Trans. Path. Soc., Med. Times and Gazette, 1855.	25	6 mos.	Moderate.	Blow.	Small coconut.	No, except at time of blow.	R.	Ablation.	Successful.	Ovoid, elastic. Cysts.	Colorless fluid in some; yellow, glairy, almost gelatinous fluid in others.	Yes.	Healthy.	Partly swollen.
(23) Reverdin. Rev. Med. de la Suisse Romande, 1889.	44	5 mos.	Good	Blow.	Fist.	No. Sense of weight, with traction on cord.	L.	Ablation.	Successful.	Oval, firm, non-translucent non-fluctuating. Cysts.	Pus and a sticky mucous fluid.	Yes.	Fused with testis.	Thickened.
(24) Malassez. Archiv. de Physiologie Normale et Pathol., 1875. Bull. d. l. Soc. d'Anatom., 1874.	21	7 mos.	Good	Spontaneous	10 cm. long, 6.5 cm. wide, 4 cm. thick. Weight, 277 gms.	None. Some traction on cord.	L.	Ablation.	Successful.	Ovoid, smooth, elastic and fluctuating.	Slightly viscid, transparent liquid. Granular and homogeneous substance.	Yes, but atrophied.	Healthy.	Healthy.
(25) Fergusson. Trans. Path. Soc., Lond., 1854. Med. T. G., 1855.	32	18 mos.	Good	Blow.	Length, 11.5 cm.; breadth, 6.5 cm.	No.	L.	Ablation.	Successful.	Cysts.	Thick, white gelat. fluid. Free granular matter. Cholesterolin.	Yes.	Not stated.	Not stated.
(26) Robinson. Trans. Path. Soc., Lond., 1890.	37	11 weeks.	Not stated.	None apparent; no injury.	Diam., 7.5 cm.	No. Traction on cord.	R.	Ablation.	Successful.	Globular, hard, with few elastic spots. Cysts.	Brown, mucous fluid. No intra-cystic growths.	Yes.	Normal.	Normal.
(27) Cruvelheir. Bull. de la Soc. d'Anatom. de Paris, 1873.	30	3½ mos.	Not stated further than non-syphilitic.	Blow.	Slightly larger than fist.	Only when in motion.	Not stated.	Ablation.	Successful.	Ovoid, regular. Cysts.	Blood.	Yes.	Not stated.	Thickened for some slight distance.
(28) Horsley. Trans. Path. Soc., Lond., 1883.	31	18 mos.	Never strong.	Blow.	Length, 9 cm. by 6.5 cm.	Yes.	L.	Ablation.	Successful.	Firm, oval, elastic. Cysts.	Some thick, some thin mucous and fluid; sometimes mixed with blood and fatty detritus.	Not stated.	Not stated.	Thickened.
(29) W. Haward. Trans. Path. Soc., Lond., 1871.	30	2 yrs.	Poor; syphilitic.	Not stated.	Average lemon.	Not stated.	L.	Ablation.	Successful.	Oval and firm. Cysts.	Mucous fluid, soft gray matter and large, irregular, nucleated cells.	Yes.	Not stated.	Not stated.

CYSTIC DISEASE OF THE TESTIS (Continued).

Condition of Tun. Vag.	Condition of Tun. Alb.	Nature of Stroma.	Complications.	Cartilage.	Muscular Tissue.	Bone.	Cardioma.	Sarcoma.	Adenoma.	Lining of Tubules and Cysts.	Cause of Death.	Time of Death after Operation.	Result of Autopsy.	Remarks.
Not stated.	Thinned.	Pearly nodules	None.	Yes	No.	No.	"Encephaloid."	No.	No.	Not stated.	Cancer.	5 mos.	Most extensive development of malignant disease throughout the body.	
Thickened; vascular.	Thickened.	Fibrous and cartilaginous.	None.	Yes	No.	No.	?	No.	No.	Cylindrical and pavement epithelium. Also ovoid and spherical cells with large nuclei.	Exhaustion.	28 mos.	None.	During life an abdominal tumor existed as shown by a swelling in the left iliac fossi. Death was believed to be due to cancerous infiltration of the abdominal glands.
Thickened and congested. Adherent to tun. alb.	Thinned. Adherent to tun. vag.	Fibrous with connective tissue corpuscles.	None.	No.	Non-striat.	No.	No.	Yes	No.	Ciliated, cylindric, and pavement epithelium. Cells with single and double nuclei and some fusiform cells.				Six months after the operation there were no signs of a relapse or of general infection. The man's health remained good. Tumor thought to be benign.
Not stated.	Thinned.	Fibrous	None.	No.	No.	No.	No.	?	No.	Fusiform, cordate, ovoid and spherical cells.				No subsequent history.
Normal	Not stated.	Fibrous and cartilaginous.	None.	Yes	No.	No.	No.	No.	No.	Pavement epithelium.				No subsequent history. Tumor believed to be non-malignant.
Not stated.	Thickened.	Fibrous, cartilaginous, sarcomatous.	None.	Yes	No.	No.	No.	Yes	No.	Not stated.				No subsequent history.
Small quantity serum.	Thickened.	Fibrous tissue and sarcoma.	Cardiac, renal and splenic dis. Hernia.	No.	No.	No.	No.	Yes	No.	Cylindrical and flattened epithelium.				Secondary sarcomatous growths in lungs, liver and bladder.
Some fluid.	Not stated.	Fibrous, cartilaginous	Syphilis, and fung. tumor of leg.	Yes	No.	No.	?	No.	Yes	Collection of large epithelial cells in meshes of fibrous tissue.	Exhaustion.	2½ years.	Ulc. cancer growth in left Scarpa's triangle; carcin. of left pelvic and lumbar glands; cancer nodules in lungs.	Origin of cysts in rete testis.

TABULATED STATISTICS OF FORTY CASES OF

References.	Age of Patient.	Duration of Disease.	Health before Operation.	Cause.	Size of Tumor.	Pain.	Which Testis.	Operation.	Result of Operation.	Nature Gross of Tumor: Gross Appearances.	Contents of Cysts.	Layer of Test. Subst. over Tumor.	Condition of Epididyma.	Condition of Spermatic Cord.
(30) Lagrange. Progrès Méd., 1882.	23	3 mos.	Good	Immediately followed a blow.	Weight, 205 grm.; width, 8 cm.; length, 9 cm.	Yes.	L.	Ablation.	Successful.	Soft on palpation. Cysts.	Some with clear and limpid, some with pearly, and some with green puriform contents.	Yes.	Normal.	Normal.
(31) Liégeois. Gaz. des Hôp. de Paris, 1886	25	7 mos.	Good	Not stated.	Length 10 cm., breadth, 10 cm., weight, 500 grms.	Yes.	L.	Ablation.	Successful.	Round, non-translucent, elastic, fluctuating.	Not stated.	Not stated.	Not stated.	Not stated.
(32) Jouon. Bull. de la Soc. Anatom., 1859.	27	15 days	Good	None apparent. No blow.	Small apple.	No, but a drawing sensation on cord.	R.	Ablation.	Successful.	Globular, tense, with elastic nodules. Cysts.	Serous; some with clear, some with bloody fluid.	Not stated.	Small but normal.	Small but normal.
(33) Sentleben. Virchow's Arch. B. 15, 1858.	35	1½ yrs.	Good	None apparent.	Child's head.	No, except on pressure at one point.	R. This testis had never fully descended.	Ablation.	At first successful. Died soon after with typhoid symptoms.	Firm, elastic, fluctuating. Cysts.	Partly clear and partly reddish yellow sticky fluid; cholesterine, "cholesteatom-perlen."	Yes, atrophied.	Fused with testis.	Slightly thickened otherwise normal.
(34) Féreol (Cauchois). Gaz. de Hôp. 1870. Bull. d. l. Soc. d'Anatom., 1870.	78	Not stated.	Poor. Small and thin.	None stated.	Hen's egg.	No.	L.	No.	No.	Fluctuating. "Donnait à la main la sensation particulière de frémissement hydra-tique."	Clear, transparent fluid; no cells; no crystals.	A few tubules. Very doubtful.	Normal.	Normal.
(35) Ehrendorfer. Arch. f. Klin. Chirurg., 1882.	22	1½ yrs.	Not stated.	Not stated.	Length, 6 cm.; breadth, 2 cm.; thickness, 4 cm.	No.	R.	Ablation.	Successful.	Oval, elastic, fluctuating. Cysts.	Partly clear and serous; partly brown and gelatinous.	Yes.	Thickened, with small cysts.	Normal.
(36) Coulson. Med. Times and Gazette, 1855.	18	2 mos.	Good	Not stated.	Length, 7.5 cm.; width, 5 cm.	Occasional.	R.	Ablation.	Successful.	Smooth, elastic, without fluctuation. Non-transparent.	Glairy gelatinous fluid.	Yes.	Normal.	Normal.

CYSTIC DISEASE OF THE TESTIS (Continued).

Condition of Tun. Vag.	Condition of Tun. Alb.	Nature of Stroma	Complications	Cartilage.	Muscular Tissue.	Bone.	Carcinoma.	Sarcoma.	Adenoma.	Lining of Tubules and Cysts.	Cause of Death.	Time of Death after Operation.	Result of Autopsy.	Remarks.
Not stated.	Not stated.	Connective tissue with carcin.	Three small indur. glands in left iliac fossa.	No.	Un-striped muscle.	No.	Yes	No.	No.	Columnar and pavement epith. Peripheral portion of tumor "pure cancer."				No subsequent history.
Not stated.	Thickened.	Fibrocartil.	None.	Yes	No.	No.	No	No.	No.	No microscopical examination made.				Was well one month after the operation.
Not stated.	Not stated.	Fibrous and cartilaginous.	None.	Yes	No.	No.	No.	No.	No	Not stated.				No subsequent history.
United in places to tun. alb.	United in places to tun. vag.	Elastic, fibrous and connective tissue. Gran. cells and free nuclei.	None.	Yes	Un-striped.	Yes.	Yes	Yes	Yes	Epithelial sprouts of gran. tissue with bulbous termination and offshoots, glandular in appearance. Cylind. and round cells with 1 or 2 nuclei as well as pavement epith. and fat globules. Ciliated epith. in nearly all seated on layer of oval and round cells.	Septicemia with icterus.	15 days.	None obtained.	15 days after operation was up and about, when he had a chill followed by typhoid symptoms and the wound became unhealthy in appearance.
Normal	Not stated.	Not stated.	None.	No.	No.	No.	No.	No.	No.	Connective tissue and pavement epithelium with nuclei.	Carcinoma of the clavicle.	No operation. Died 5 days after admission to hospital.	Carcinoma of right clavicle.	He entered the hospital for a cancerous infiltration of the right sternoclavicular articulation. L. testis in scrotum was size of a hen's egg, and contained nothing except fluid, which was contained in the tun. alb. There were no traces whatever of the normal tissue of the testis. The right testis was in the inguinal canal and had never descended. It was the size of a filbert, flat and discoid. He said that he had never had any venereal disease. Had been married and had had several children.
Slightly thickened. Small amount of fluid.	Smooth	Fibrous; cartilaginous; carcinomatous.	On cutting the sperm-cord collapsed followed, with abundant suppuration from inguinal canal and high fever.	Yes	Striped	No.	Yes	Yes	No.	Pavement and cylindrical epithelium. Long, spindle-shaped and oblong cells.	Peritonitis.	About 1½ yrs.	None.	According to attending physician death was due to metastasis of old disease (cancer).
Not stated.	Slightly thickened	Not stated. "Tissue of light rose color." Q. Fibrous?	None.	No.	No.	No.	No.	No.	No.	Not stated.				No subsequent history.

TABULATED STATISTICS OF FORTY CASES OF

	References.	Age of Patient.	Duration of Disease.	Health before Operation.	Cause.	Size of Tumor.	Pain.	Which Testis.	Operation.	Result of Operation.	Nature of Tumor. Gross appearances.	Contents of Cysts.	Layer of Test. Subst. over Tumor.	Condition of Epididymis.	Condition of Spermatic Cord.
(37)	Birkett. Med. Times and Gazette, 1855.	33	3 mos.	Fair.	Blow.	Large fist.	No. "Scalding and pain in loins."	R.	Ablation.	Successful.	Non-transparent, oval Cysts.	Not stated.	Yes.	Normal.	Normal
(38)	Tillaux. Bull. d. l. Soc. de Chir. d. Paris, v. 6, 1865.	36	8 mos.	Good	Blow?	Turkey's egg.	No. Some traction on cord.	L.	Ablation.	Successful.	Non-transparent, pliciform, elastic, non-fluctuating. Cysts.	In some, fluid thin, sticky and bloody; in others, solid epith. cells.	Yes.	Normal.	Cysts.
(39)	Tricomi. Bollettino d. Real. Accademia. Med. d. Roma, 1883.	39	5 mos.	Good	None apparent. Sudden.	Large orange.	No. Some dragging on cord.	L.	Ablation.	Successful.	Oval, regular and elastic; smooth. Cysts.	White and yellow, firm granular mass; granular amorphous matter; fat globules.	Yes.	Not stated.	Not stated
(40)	Sturgis. The American Medical Quarterly, 1899.	28	2 yrs.	Fair.	Blow.	Length, 13 cm.; width, 12 cm.; weight, 285 gms.	Some at begin'g; generally speaking, no; occasionally aches from weight.	L.	Ablation.	Successful.	Hard, oval and smooth. Cysts.	Cheesy, necrotic matter.	No.	Fused with testis.	Thickened for 8 cm. in length

CYSTIC DISEASE OF THE TESTIS (Concluded).

Condition of Tun. Vag.	Condition of Tun. Alb.	Nature of Stroma.	Complications.	Cartilage.	Muscular Tissue.	Bone.	Carcinoma.	Sarcoma.	Adenoma.	Lining of Tubules and Cysts.	Cause of Death.	Time of Death after Operation.	Result of Autopsy.	Remarks.
Not stated.	Thinned.	Fibro-cellular.	None.	Not stated.	Not stated.	Not stated.	Not stated.	Not stated.	Not stated.	Not stated.				No subsequent history.
Thickened.	Thinned.	Cartilaginous.	None.	Yes	Not stated.	Not stated.	Not stated.	Not stated.	Not stated.	Not stated.	Exhaustion from cancer, infilt. of internal organs.	9 mos.	Small cancer tumors in both post. corn. of brain with hemor. Cancer lungs, pleura, spleen, R. kidney and large intestine.	Disease of testis at time of operation believed to be benign.
Not stated.	Not stated.	Fibrous and elastic tissue.	None.	Yes	Striat. and non-striat.	No.	No.	No.	Yes	Cylindrical and pavement epith. Prolif. tissue from cyst walls.				No subsequent history.
Normal.	Thickened.	Connective tissue; sarcoma; cartilage.	None.	Yes	Non-striated	Commencing.	Yes	Yes	Yes	Cylind. and tessellated epithelium; cholesterolin; colloid material. Prolif. tissue from walls.				See report of case.

The three plates following are referred to in the history of the case and in the text of the paper, to illustrate the various points which are made.—[F. R. S.]

Fig. 1



Fig. 2.

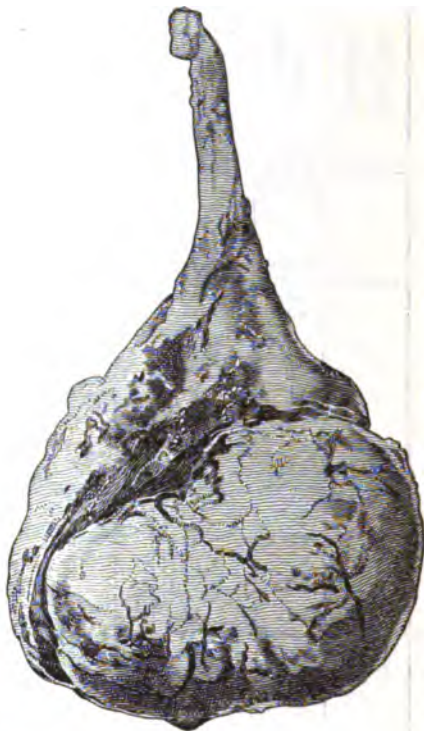


Fig. 3.

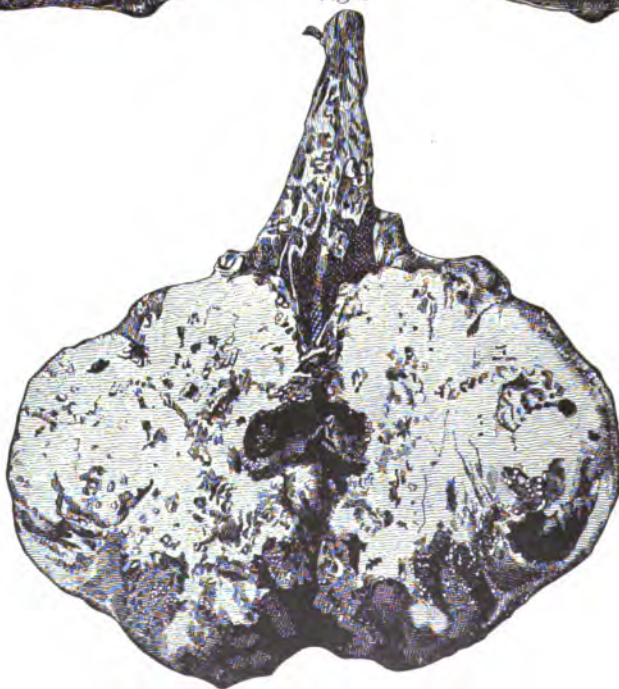


PLATE I.

Fig. 1. L. Testis, Internal Aspect. Fig. 2. L. Testis, External Aspect.
Fig. 3. L. Testis. Laid open, showing cysts.

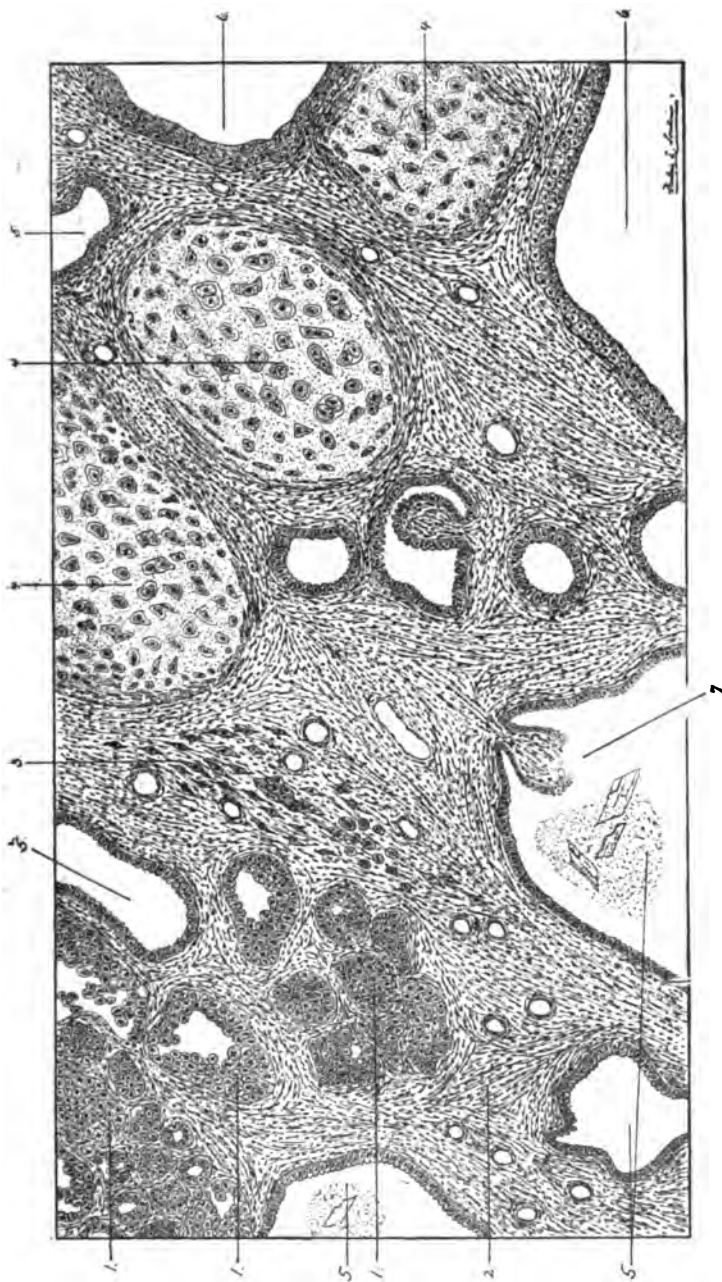
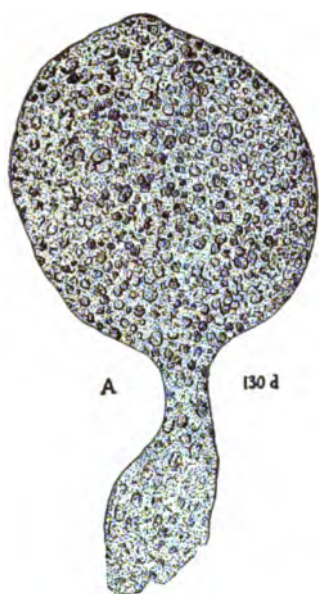


PLATE II.

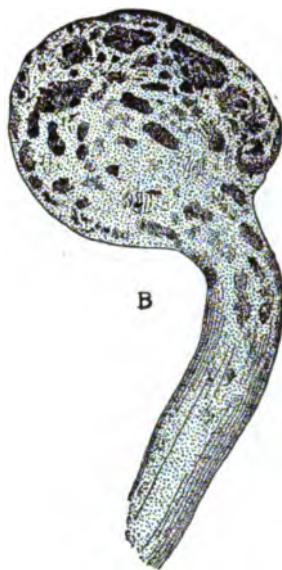
Diagrammatic representation of stroma and contents of cysts.

1. Adeno-carcinomatous tissue.
2. Connective tissue stroma.
3. Sarcoma cells in the above.
4. Cartilage.
5. Cysts lined with cylindrical epithelium.
6. Cysts lined with pavement epithelium.
7. Glandular tubes, lined with cylindrical epithelium, showing papillary outgrowths.



A

130 d



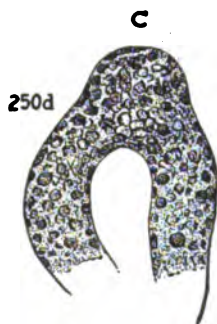
B

130 d



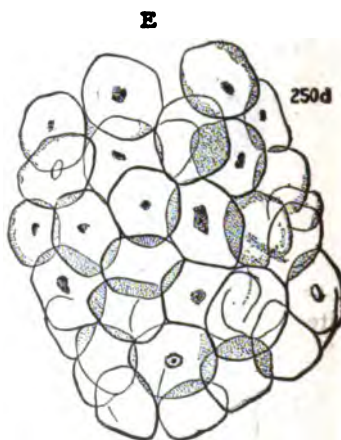
130 d

D



C

250d



E

250d

PLATE III.

A. and B. Seminal tubes terminating in a dilated pouch. C. Lateral dilatation of a tube filled with dark granular matter. D. Uniform dilatation of a tube. E. Tesselated epithelium from a large cyst.

(Taken from Mr. Curling's paper in the Med. Chirurg. Transac., London, 1833.)

DOES SEPSIS PLAY A PROMINENT CAUSATIVE ROLE IN THE PRODUCTION OF PUERPERAL INSANITY?

BY EDWARD N. BRUSH, M. D.,

Physician-in-Chief and Superintendent, Sheppard and Enoch Pratt Hospital; Professor of Psychiatry in the College of Physicians and Surgeons, and in the Women's Medical College, Baltimore.

IT is common to group under the term Puerperal Insanity the various forms of mental disturbance which occur in connection with pregnancy, parturition, the puerperal state and the period of lactation. It is proposed here to briefly consider only insanity arising during the puerperal state, and apparently depending upon conditions incident thereto; in other words, insanity occurring during a period extending from delivery to the cessation of the lochia. As this is the true puerperal period, it is evident that the term puerperal insanity should only be applied to cases occurring in this period, and clearly depending upon conditions incident to the puerperal state.

Numerous statistics have been gathered bearing upon the occurrence of puerperal insanity. Gundry¹ found that in fourteen American asylums, 1859-60, showing the admission of 11,762 women, 1,050, or nearly 9 percent., of the patients, became insane from causes incident to the puerperal period. Adding to these statistics from English and French institutions, the results did not change the percentage. Dr. J. B. Tuke, in some papers published in the *Edinburgh Medical Journal*, quoted by Dr. Fordyce Barker in his work on puerperal diseases, states that in 2,181 women patients admitted to the Royal Edinburgh asylum, a trifle over 7 per cent. became insane from puerperal causes.

In a table showing the causes of insanity in patients admitted to the asylums and registered hospitals of England and Wales during the ten years, 1878 to 1887, embracing 69,560 women, 6.7-10

per cent. were insane from causes incident to parturition and the puerperal state. These excluded conditions incident to pregnancy and lactation, which were probably included in the statistics cited by Gundry and Tuke. During the next five years, 1887 to 1892 inclusive, 8,246 women were admitted to the same institutions, of whom 6.3-10 per cent. became insane from causes ascribed to parturition and the puerperal state. It will thus be seen that there is a very fair agreement in the experiences of observers as to the influence of the puerperal state in the production of mental disturbances. It is not to be assumed by any means that in all of these cases insanity was due solely to conditions incident to the puerperal state.

The two great elements which enter into the causation of insanity are without question heredity and sepsis, and in these cases heredity plays by no means an unimportant part. Of the fifty-six cases analyzed by Gundry, 40 per cent. had insane relatives. The same proportion was observed by Esquirol and Tuke, a slightly larger proportion by Marcé; while in over 46 per cent. in the cases observed by Helfft, of Berlin, was there evidence of hereditary predisposition. The influence of shock, prolonged and exhausting labor and especially anxiety is not to be overlooked. Barker, in his work on Puerperal Disease, says: "Since 1855 I have seen thirteen cases of puerperal mania in the wives of physicians, nine in this city and four in the adjoining cities. All but one were primiparæ. It has impressed me as being very extraordinary that so large a number should have occurred in one special class, and I think the following is the probable ex-

¹ American Journal of Insanity, vol. xvi., page 295.

planation: All of these were women of education and more than usual quickness of intellect, and, beginning a new experience in life, and having access to their husbands' books, they probably had read just enough on midwifery to fill their minds with apprehensions as to the horrors which might be in store for them, and thus developed the cerebral disturbances, just as any other normal emotions may."

Sir James Y. Simpson, according to Barker, regarded puerperal mania especially due to toxemia, and as most frequently associated with albuminuria, and many others seem to have adopted these views, among them the late Prof. George T. Elliot; but of the five cases reported in his *Clinic*, not one was associated with albuminuria. It seems, however, not at all improbable, when the influence upon the nervous system of the toxic elements found in the blood in conditions of albuminuria is recognized, that uremic poisoning has, in a certain proportion of cases, a prominent place in the causation of puerperal insanity. There is, however, another element, toxic in character, hinted at by the older authors and recognized in a measure by more recent teachers, which, in the opinion of the writer, may be said to have as prominent a rôle in the causation of puerperal insanity as any condition known to be associated with the puerperal state, and that is sepsis. Dr. John B. Chapin, in his excellent *Compendium on Insanity*, page 118, after discussing the causes commonly enumerated indicating that puerperal insanity is more frequently due to sepsis, says: "Since the introduction of stricter antiseptic measures in obstetrical practice, the number of cases of puerperal insanity has decidedly decreased. For a period of ten years preceding the year 1897, twenty cases of acute puerperal insanity were admitted; for a corresponding period preceding 1877, ninety-nine cases were received." Dr. Chapin unfortu-

nately omits to state how many women patients were admitted to the Pennsylvania Hospital, from the records of which these statistics are taken, during the two periods which he cites, but it is known that the admission rate was fairly uniform.

At the Eastern Michigan Asylum for the Insane at Kalamazoo, I am informed by the medical superintendent, Dr. W. M. Edwards, that 907 women were admitted from 1877 to 1886 inclusive; of these, seventy-one were regarded as puerperal cases, or about 7.8-10 per cent., while for 1887 to 1896 inclusive, 1,241 women were admitted, of which number forty-eight, or but 3.8-10 per cent., were suffering from insanity supposed to be of puerperal origin. The experience at the State Hospital for the Insane at St. Peter, Minn., is somewhat similar. In the decade between 1887 and 1896, seventy-two women were admitted whose insanity was ascribed to conditions connected with the puerperium, while from 1877 to 1886, the preceding ten years, seventy-six were admitted whose insanity was ascribed to the same cause, but during the second ten-year period, that is, from '87 to '96, almost twice as many women were admitted as during the previous decade.

At the McLean Hospital, near Boston, the experience does not, as far as statistics are concerned, bear out the suggestion made by Dr. Chapin. The proportion of cases of puerperal insanity for the period, 1887 to 1896, is about 6-10 of 1 per cent. less than those admitted for a similar period, 1877 to 1887. Clinically, puerperal insanity presents itself to the practitioner in the vast majority of cases in the form of delirium; occasionally the type is of a melancholic kind, but the proportion of cases of depression occurring during the puerperal period is small, as compared with the number of cases in which there is manifest excitement. Neither the excitement nor the

depression, however, with a few exceptional instances, correspond with examples of acute mania or of acute melancholia, and the cases of insanity, at least as far as the writer's observation goes, arising from these causes, will be more properly classified under a term which has within a few years come into common use, that is, confusional insanity.

The mania is more of a delirious type. It is easy to distinguish ordinary simple acute mania from the delirium with which general practitioners are so familiar, associated with pneumonia, typhoid fever and other febrile conditions. In mania, however, incident to puerperal insanity, the distinction is not by any means so easy, and the physician is often reminded of the close resemblance between the mania of puerperal states and the delirium which, for example, he may have observed in ordinary puerperal fever, and which subsides when fortunately the fever passes away. It is from the clinical side of these cases that an argument may be drawn in favor of the belief in their septic origin. Those who deal with the insane are not infrequently brought in contact with forms of insanity which have, as their exciting cause at least, some form of sepsis, and with another and very much larger group of cases due to various forms of toxemia, and it is the opinion of the writer that the careful analysis of the clinical pictures shown in the mental manifestations of these cases will show their close resemblance to each other.

Some time since in preparing a clinical report of a number of cases of mental disturbance associated with peripheral neuritis,¹ I said that the resemblance, from a psychological standpoint, between these cases and "their further resemblance to the mental disturbance observed from various toxic causes, either from poisonous substances taken into

the body or generated therein during physiological processes, seems most marked." At the time these cases were under care, the auditory hallucinations, the restlessness, the disturbed pulse and elevated temperature and the substratum of conscious intelligence, which in these cases, as well as in a large number of the cases of puerperal insanity, especially in the early weeks of the disease, can be shown to exist, were pointed out as features of striking resemblance.

A patient now under care has been a clinical illustration of these points. Mrs. H., aged 27, was admitted to the hospital five weeks after the birth of her first child. The confinement was normal, and the patient did well for ten or twelve days, at the end of which time she complained of severe abdominal pain and tenderness, and in a day or two manifested symptoms of delirium, showing great religious fervor and at times ecstatic states. The delirium was not continuous, but was interrupted by periods of consciousness, during which the patient recognized that she had been delirious. The periods of quiet, however, became less frequent and prolonged, and there was persistent insomnia.

When admitted to the hospital, mental symptoms had existed for about three weeks. She was noisy, profane and obscene. The skin was hot and dry, pulse rapid, tongue dry and brown, teeth covered with sordes. Although almost constantly noisy and incoherent, she recognized at times that she had been brought to a hospital, that the faces of the physicians and nurses were strange, and in momentary glimmerings of consciousness said she knew she was "insane." The urine was dark, and turbid, urea was present in excess, and a small amount of albumin, 1-10 of 1 per cent. For weeks this patient has been almost continuously delirious. There have been constant auditory and visual hallucina-

¹ Proceedings of the American Medico-Psychological Association, vol. iii., page 200.

tions, as well as illusions. In short, the symptoms have been not those of ordinary acute mania so much as those of simple delirium, and in numerous cases this has been true, where other toxic influences have been suspected or demonstrated.

It was not the intention of the writer, in preparing this paper, to go into the general subject of puerperal insanity and of its treatment or prognosis, but to call the attention of the profession, in a journal intended for the general practitioner, rather than the specialist, to an element in the causation of this condition to which he believes heretofore too little attention has been paid. If the expe-

rience of other observers, especially general practitioners, who really are the ones who see these cases in their inception, and are able best to judge from all the surrounding circumstances and the previous history, personal and family, of the patients, as to the etiological factors which enter into the cause of the mental disturbance, shall confirm the conclusions which he had drawn from an observation of cases of this kind now extending over several years, the writer will be extremely gratified; if, on the contrary, he has made too much of sepsis as the cause, he will also be gratified to have his conclusions corrected and set aside.

DO WE NEED IODOFORM?

By F. A. DUNSMOOR, M. D.

(*Medical Dial.*)

THE tendency to follow beaten paths, rather than act upon reason, is not new in surgery. Iodoform is not a germicide, yet it is more often used in the form of gauze dressing for pus cavities or septic wounds than any of the so-called antiseptics or germicides. It has the most disagreeable and lasting odor of any surgical drug, yet displaces more elegant, cheaper, and effective remedies, devoid of odor. It is poisonous, and frequently irritating to a sensitive skin; yet, patients must submit to its application, while the supply houses offer a large list of bland and non-poisonous remedies for local dressings.

To the credit of iodoform, however, it can be said that it lessens the power of certain microbes by liberating free iodine upon direct contact. Mixed with glycerine, forming an emulsion of 10 to 20 per cent., it has been extensively used for injections into tuberculous foci, and many surgeons have vaunted its value when so used between joint surfaces. The writer knows that in such cases it fails four times as often as it cures. I do not mean it fails for simple joint effusions where any incision or aspiration produces a cure; but where there is un-

doubted tuberculosis of joint cartilages, then I am certain that iodoform does not, in itself, cure the tuberculosis.

The chief claim for its value has grown out of the use of iodoform gauze for dressings within the vagina, bladder, rectum or mouth, and, in a lesser way, for temporary use in cases of purulent appendicitis, and where large abraded surfaces present examples of continued parenchymatous hemorrhage.

Having said this much, what more can be added as a reason for the continued use of a drug, clinically and chemically inefficient, poisonous, disgusting, irritating, and having superior remedies as successors for each place where iodoform has been used? If it were not for this last statement, this brief article would not have been written.

For dusting lines of union in sutured wounds, boric acid is vastly superior, is an efficient germicide, and may also be as safely used in the form of gauze for all places where iodoform has been a favorite, save for the control of hemorrhages, when acetanilid should be used. Aristol, dermatol, or iodol may be used for covering wounds, if preferred to boric acid.

HEART DISEASE FROM AN OBSTETRICAL POINT OF VIEW.

BY ADAM H. WRIGHT, B. A., M. D.

Professor of Obstetrics, University of Toronto, Toronto, Ontario.

THE subject of heart disease is very interesting to the obstetrician from many points of view, particularly in connection with marriage, pregnancy and labor. I desire to consider some of these points in their practical or clinical aspects.

Should a Woman with Valvular Cardiac Disease be Allowed to Marry?

I think the answer to this question should be yes, with certain exceptions. Of course, in a large proportion of cases, probably the majority, the physician is not consulted in the matter. Frequently the refusal to sanction a marriage makes no difference in the course of events. I know one case where a young woman was married contrary to the advice of her physician; but, when pregnancy promptly followed, the young bride and her mother fully realized the serious aspects of her condition, and asked a physician to induce an abortion. When called in consultation I refused to consent to any such procedure on account of the absence of serious symptoms. This young woman is now the mother of two healthy children, aged 3 and 1 respectively, and is herself enjoying fairly good health.

In naming the exceptional symptoms which should change the answer from yes to no, I cannot do better than quote from Hanfield Jones¹: "If there are any serious symptoms of cardiac disturbance present, or attacks of dyspnea, breathlessness, palpitation on exertion, or hemoptysis, marriage should not be sanctioned." I have for some years entertained the opinion that a young woman having valvular lesions of the heart, who

can carry out her social and domestic duties without any serious symptoms of ill health, should not be prevented from marrying, although I freely admit that child-bearing is likely to aggravate the dangers connected with heart disease. I may say at the same time that I fear the dangers of pregnancy and labor in such patients less than I did some years ago.

Which of the Heart Lesions is the Most Serious?

It is generally acknowledged that mitral stenosis is the most dangerous condition. This was pointed out very clearly many years ago by Angus Macdonald²; and writers since the publication of his work, such as Berry Hart³, Galabin⁴, Fothergill⁵, and others fully endorse Macdonald's views. The rarer conditions of aortic stenosis and aortic regurgitation are dangerous, but not so much so as mitral stenosis. Mitral regurgitation alone is not as a rule a matter of serious import.

How Does Pregnancy Affect the System in Cases of Heart Disease?

It is apt to disturb compensation, and the backward pressure may primarily overload the pulmonary circulation, causing serious thoracic complications, and secondarily may interfere with the functional activity of other organs, especially the kidneys and liver. Sometimes the general disturbance in the working of the various organs causes abortion, although, I think, not so often as has generally been supposed. In one patient with marked mitral insufficiency whom I attended about ten years ago the labor was normal, but the child was still-born. She had

one child living, aged 9. After the birth of this child she became pregnant four times with the following results: one miscarriage at three months, and three stillbirths at term, including the labor in which I attended her. I don't know whether the heart disease was responsible for these results. I have attended in labor several other patients with mitral insufficiency without having any serious trouble. About twenty years ago I was called to attend a woman in confinement. I had not seen her before, and when I arrived the labor was well advanced. The second and third stages were completed in a few minutes. I then found a loud regurgitant murmur. I had before that time supposed that this was a serious condition in relation to labor, and I was much alarmed. Since then I have learned by experience that mitral insufficiency is not a very serious condition in pregnancy and labor.

I formerly thought that the loss of balance throughout the system from heart disease was apt to cause that form of general toxemia which produced eclampsia; but, although albuminuria and dropsy are common complications, I am now doubtful about the frequency of convulsion in such cases. In some cases pregnancy appears to produce no ill effects whatever. Dakin^e says that sometimes the patients appear to improve during pregnancy, owing to the hypertrophy of the heart natural to this period. This is quite in accord with what I have observed. Some of my patients, especially those having mitral insufficiency, have seemed better during pregnancy than they were before. I may say, however, that sometimes they have lost ground after labor, especially during lactation.

TREATMENT DURING PREGNANCY.

Notwithstanding the favorable issue in a large proportion of cases every patient should be carefully watched during pregnancy, and should be properly treated

when serious symptoms appear. Vinay^e says he agrees with Jaccoud, Huchard and others that matrimony is not to be forbidden when a lesion in the heart is compensated and no complication has arisen, but he recommends watchful care during pregnancy. He insists on repose, milk diet, aperients, and free and frequent dry cupping to the thorax. Berry Hart, in the article before referred to, recommends rest and the administration of tincture of strophanthus when circulatory disturbance begins. He prefers strophanthus to digitalis, because it is a heart stimulant without increasing its work by contracting the arterioles, while digitalis, on the other hand, does contract the small arteries, and thus tends to throw more blood into the venous system.

Without any further reference to the views of others at the present time I will give briefly the rules which should in my opinion be observed in such cases:

(1) *Keep the Patient at Rest Without Going to Extremes.*

A certain amount of exercise and recreation is frequently, if not generally, beneficial. Enjoin absolute rest, however, if serious symptoms appear.

(2) *If the Equilibrium of the Circulation is Disturbed as shown by the Ordinary Pulmonary Symptoms of Dyspnea, etc., Administer Cathartics, especially Calomel followed by Epsom Salts.*

The latter is a good, old-fashioned medicine whose virtues are not as highly appreciated in many quarters as they deserve.

One of the best lessons in therapeutics that I ever received came from Dr. E. M. Moore, of Rochester, who visited the Ontario Medical Association about fifteen years ago. He talked to us about Colles's fracture, and other surgical subjects, in a delightful way; but his short lecture of about fifteen minutes on the administration of Epsom salts for the relief of dropsy caused by heart, kidney and liver disease, as well as for other disor-

ders, was to me the most interesting of his utterances. Although I had been accustomed to use salts more or less since early boyhood I then discovered that I had never learned how to properly administer the medicine. And yet how simple is the secret! It should be given thoroughly, systematically and continuously until it relieves symptoms, and after that it should be administered for weeks or months, if need be, to prevent the recurrence of the symptoms. I carried out Dr. Moore's instructions for some time, observed the good results and was abundantly satisfied.

For the last ten years or more I have preached and practised Epsom salts (if I may be allowed to use such an expression) whenever and wherever I had an opportunity. I believe that in cardiac disease of pregnancy with serious symptoms, especially if there be systemic toxemia, the proper administration of Epsom salts will accomplish more good than all other remedies (including rigid dieting) put together. Next to saline cathartics I would place strychnine and digitalis (or strophanthus). For marked dyspnea use nitrate of amyl, which affords more prompt relief for this distressing symptom than any other medicine, so far as my experience goes. Frequent dry cupping of the thorax in the region of the heart is at times beneficial, and is always safe.

(3) *Regulate the Diet.*

A great many still believe with Charpentier, Vinay, and others that a milk diet in these cases is the best. I have not prescribed a purely milk diet for any condition or disease for fifteen years. I allow and generally encourage my patients to drink as much milk as they like, but no more. I will not now discuss in detail the important subject of diet, but will briefly indicate what I prescribe and prescribe in the way of food.

Let the patient select from the following: milk, buttermilk, kumyss, tea, water,

lemonade, table mineral waters, fish, oysters, most of acid fruits (strawberries doubtful, frequently injurious), green vegetables, including spinach, lettuce, cabbage, cauliflowers, celery, radishes, rhubarb, green peas and beans, green corn on the cob, carrots, onions, pickles, table bread, breakfast rolls, toast, potatoes, a limited amount of pepper, salt and vinegar for flavoring, oatmeal, cornmeal, rice, tapioca and the like. Chicken every other day. Any kind of meat once a week.

Avoid meats excepting as recommended, meat broths, eggs, cheese, asparagus, sweet potatoes, turnips, beets, syrups, candies, sweet fruits, such as grapes, bananas, raisins, pears and preserved fruits.

These rules as to dietary are practically those adopted by Dr. Charles W. Purdy, of Chicago, for patients suffering from interstitial nephritis, and are more especially important where albuminuria is associated with heart disease. If there be no albuminuria meat and eggs may be added to the prescribed list.

(4) *Give no Diuretic Remedies Excepting Water.*

(5) *Recommend the Ordinary Daily Warm Bath to keep the Skin Acting Properly, and nothing else.*

The wet pack, so dear to some physicians, is, I think, useless, and frequently an abomination.

(6) *It is Sometimes Advisable to Induce Abortion.*

I am very glad to be able to express a positive opinion that this radical method of treatment is seldom required. If marked failure of compensation occurs early in pregnancy, as shown by serious pulmonary congestion, urgent dyspnea and the like, the patient should in the first place receive appropriate treatment. If the symptoms become worse instead of better, operative interference may be deemed advisable. Many women, especially Roman Catholics, will not consent

to any such procedure. Of course in such instances the patient's decision should be final. It is extremely difficult to lay down definite rules. I may say, without any hesitation, that I am less inclined to interfere in such cases than I was years ago.

The following case, hereafter described as case III., while it caused me much perplexity, was very instructive:

Patient three months advanced in pregnancy. Had mitral stenosis. Had severe dyspnea on exertion, palpitation, rapid pulse. Similar symptoms had appeared before pregnancy on various occasions. At one time the pulmonary congestion was marked and caused hemoptysis. After careful deliberation, and with considerable hesitation, we decided to wait for one month, and watch the effect of treatment. The patient went on to full term.

(7) It is Sometimes Well to Consider the History of the Patient in Reference to Previous Pregnancies.

If she has been in great peril during a former pregnancy and labor one might think it unlikely that she could pass through such an ordeal again. I will refer in detail further on to a case where the patient was in grave danger during and after confinement. I fear that another labor would cause her death. What should I do if she came to me tomorrow two months advanced in pregnancy? I don't know, but I would not advise the induction of abortion unless grave symptoms were present. It has been pointed out by Hanfield-Jones and others that many women go through early pregnancies with comparatively little danger, but each pregnancy causes a certain deterioration of the heart muscle, which is more or less permanent; therefore, the danger of cardiac insufficiency becomes greater with each successive pregnancy. I am not certain, however, that this statement is correct in all cases, as I think I have seen more than one patient in whom pregnancy did not cause any deterioration of the heart muscle.

(8) We Have Sometimes to Consider the Advisability of Inducing Premature Labor.

I can speak a little more definitely respecting this procedure. Angus MacDonald was decidedly opposed to it, because it was "likely to do greater harm than good by disturbing the action of the heart and the condition of the lungs." I think there is a pretty general consensus of opinion among obstetricians who have devoted much attention to this subject that the views thus expressed are correct. My own experience leads me to believe that the patient has the best chance when this operation, which is always more or less an act of violence, is not performed. I will simply give the rule that we should not induce premature labor in such cases; but I don't think it should be considered absolute. It might happen that some symptoms would arise so urgent in nature that interference should be considered necessary.

LABOR.

How does Valvular Disease of the Heart affect Labor?

I am not sure that it produces any visible effect in the majority of cases. I have sometimes looked forward to certain labors with fear and trembling; and, much to my surprise, have frequently found them apparently normal in all respects. Reynolds⁸ says that "labor in the presence of cardiac diseases is apt to be rapid because the soft parts are usually resilient and lax." In my experience I have found nothing to justify this statement.

SYMPTOMS.

The symptoms during labor are not generally different from those which are found during the last few days or even weeks of pregnancy. The most serious are dyspnea, hemoptysis, precordial distress and palpitation. (Respiration and pulse are generally much quickened.) The dyspnea and other symptoms are aggravated when patient is in the recum-

bent posture. On this account the patient is in many cases compelled to sit up wholly or partially even while sleeping.

PROGNOSIS.

I have not space to quote authorities to any extent; but I may say in a general way that many careful observers give mortality rates ranging from 10 to 60 per cent. Many writers, who treat the subject carefully in other respects, fail to give statistics. I think it unfortunate that such is the case, because I believe more complete details as to results would show mortality rates much less alarming than those which I have quoted. I believe that the publication of such reports has caused many practitioners to induce abortion when there was no necessity for such procedure.

No statement has surprised me more than that made in three modern American text-books on midwifery, viz., Jewett's *Practice of Obstetrics*, by American authors; *The American Text-book of Obstetrics*, and Davis's *Treatise on Obstetrics*, that in cases of mitral insufficiency the proportion of deaths is 13 per cent. In the three books there is little or no evidence as to the origin of the unlucky thirteen. In connection with the statistics referred to I cannot help thinking that various authors have been misunderstood, because they have referred to those cases only where compensation has been seriously interfered with. In addition it is well to remember that some of these statistics are founded on results obtained during the pre-Listerian era. Judging from what I have observed I am fully convinced that the mortality rates which I have quoted, i. e., 10 to 60 per cent., are altogether wrong, or at least misleading.*

* Some of our physicians appear to take a less gloomy view than the obstetricians. Osler,* in speaking of valvular lesions of the heart, says: "Pregnancy and parturition are disturbing factors, but are, I think, less serious than some writers would have us believe."

TREATMENT DURING LABOR.

I have already indicated the medicines which are generally recognized as most suitable during pregnancy. The same line of treatment should be carried out during labor. Give strychnine and digitalis (or strophanthus) to help the heart's action: nitrite of amyl or nitro-glycerin (glonoin) for dyspnea and precordial distress. The amyl acts more promptly, while the glonoin acts well when given in small doses for days at a time during the latter part of pregnancy. The application of a cupping glass over the heart helps both dyspnea and irregularity of pulse. Administer chloroform, especially during the latter part of the first and the whole of the second stage of labor.

I find that many obstetricians in Canada think, and I believe the opinion prevails in other parts of the world, that chloroform is dangerous in labor complicated with heart disease. One time I held a similar opinion, but increased experience leads me to believe that chloroform is not dangerous; on the other hand, I think it materially aids in mitigating some of the serious symptoms. Dr. Fothergill, who represents the Edinburgh School, says in his text-book before referred to that "heart disease in labor is no contraindication for chloroform." He further adds that "those with heart disease need it more than others." It tends to relieve to some extent the dyspnea and the irregularity of the pulse, perhaps largely by preventing straining on the part of the patient. It may be administered even when the patient is sitting up during labor. I think, however, it should be used with caution, and by an assistant who devotes his whole attention to the administration of the anesthetic. Ether, as a rule, however, is positively contraindicated, particularly on account of the pulmonary complications.

The patient should be prevented from straining or "bearing down." At the completion of the first stage it is better

as a rule to deliver with the forceps. Sometimes it is necessary to let the patient sit up with her head and shoulders held up, or propped up with pillows. In such cases it is sometimes necessary to have the patient in such a position that her buttocks are projecting over the edge of the bed, while an assistant stands on either side grasping a leg or a thigh and foot so as to prevent her from slipping on to the floor. I think it is well to apply an abdominal binder, before delivery, which should be tightened during the delivery of the child. At the same time remember that a free hemorrhage is beneficial, and should be encouraged. The object of the binder is to compensate for the sudden diminution of the intra-abdominal pressure. It should, therefore, be applied above the level of the uterus in such a way that it will not prevent slight uterine relaxations, or, in other words, in such a way as not to prevent free hemorrhage. With the same object in view avoid the use of ergot. Fothergill and others advise free venesection from the arm if symptoms of embarrassed circulation persist.

Hart says that the most dangerous time for the patient in such cases is the third stage. This is probably correct, but it is well to remember that grave danger exists for several days after delivery, and, in fact, very watchful care is required for weeks.

I will now give reports of cases of mitral and aortic stenosis, without any further reference to many cases of mitral insufficiency which I have observed, and all of which ended in recovery.

Case 1. Mrs. A., æt. 26; primipara.—Dr. W. P. Caven's patient; long standing heart disease with aortic direct murmur. Present in consultation; labor tedious; forceps delivery, under chloroform; no special symptoms during first and second stages; placenta retained; hand introduced for removal; considerable hemorrhage; aortic regurgitant developed with slight endocarditis lasting about two weeks; recovered.

Case 2. Mrs. H., æt. 23; primipara.—Had heart disease for several years. Dr. Caven saw her with me when four months pregnant: had both aortic and mitral stenosis; considered the advisability of inducing abortion, but decided against because there were no serious symptoms; went on to full term without much inconvenience; labor somewhat tedious, but uneventful; delivered with forceps after dilatation; good recovery.

Case 3. Mrs. K., æt. 32; 3 para.—Dr. Caven's patient. Saw her in consultation when three months advanced in pregnancy. For two or three years previous she suffered more or less from symptoms due to heart disease. Dyspnea on exertion very serious at times; a few attacks of hemoptysis; mitral stenosis; loud presystolic murmur. Dr. Caven feared results if pregnancy were allowed to continue. I advised waiting at least a month. We decided on so doing with the understanding that I was to take charge of the patient. No serious symptoms afterwards. In fact, she seemed better during the latter half of pregnancy than during the first half. Labor—at full term—uneventful up to end of the first stage; no chloroform administered; delivered with forceps; healthy child; good recovery.

Case 4. Mrs. G., æt. 26.—Had one child sixteen months old when I saw her about the beginning of third month of second pregnancy; had a double aortic murmur, also presystolic; no serious symptoms. I did not see her after fourth month. Delivered by Dr. Caven at full term; healthy child; no difficulty.

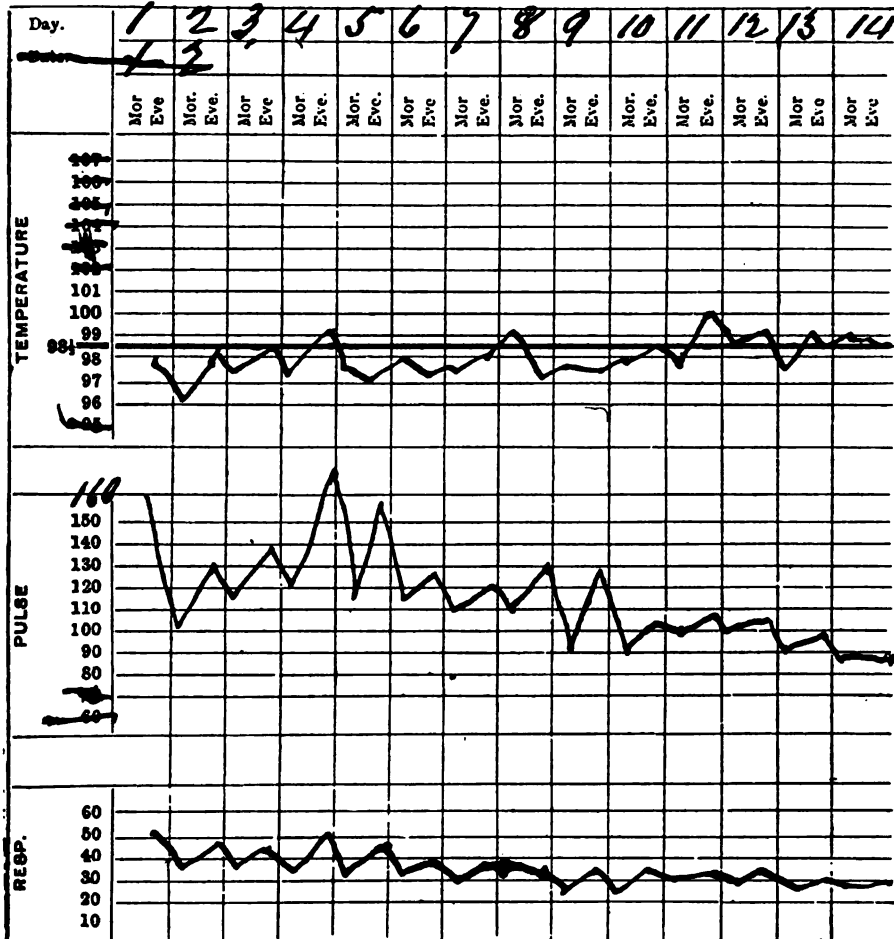
Case 5. Mrs. S., æt. 32; 2 para.—Dr. Graef's patient. Saw her in consultation early in labor. She had suffered much during pregnancy from dyspnea and marked precordial distress. When I arrived, labor was slightly advanced; os partially dilated. She was suffering much from dyspnea and distress in the region of the heart; was unable to lie down; had a well-marked presystolic murmur; also aortic murmur. Inhalation of nitrite of amyl afforded marked relief. We also administered strychnia and digitalis and a little chloroform. I was unable to remain long; Dr. Graef delivered her with forceps about four hours after I left; child dead; patient appeared to be doing fairly well for some days, died somewhat suddenly the sixth day after delivery. Patient was a poor woman living in a small house without any conveniences; no proper nursing. She refused to go to a hospital.

Case 6. Mrs. X., æt. 35; primipara.—Had

suffered for years from mitral stenosis and had been under the care of Dr. Caven, who consulted me about the case and requested me to help him in her expected confinement. When labor commenced Dr. Caven was out of town and I took charge. Labor fairly easy for a rather old primipara; no serious symptoms, but patient had two large pillows

ers to follow my example in this respect. At the time of writing, the baby is a week old, and the patient has not had an unfavorable symptom.

Case 7. Mrs. C., æt. 30; 3 para.—I attended this patient in January, 1898, but I describe her case last because I wish to go somewhat fully into details as to treatment. She had been



Remarks: From day of delivery (Jan 27, 1898) to 14th day after.

under head and shoulders; waited about half an hour after full dilatation, because symptoms were not urgent, and I was afraid of the perineum; administered a little chloroform; finally delivered easily with forceps. I had a competent and experienced nurse to assist me, and did not call any one in to administer the anæsthetic. I would not, however, advise oth-

ers under the care of Dr. Jas. F. W. Ross, in the pavilion of the Toronto General Hospital. He sent her into the Burnside Lying-in Hospital to be placed under my care during her confinement. She had been suffering for some years from mitral stenosis. I first saw her in the Burnside three days before the onset of labor. She had severe bronchial catarrh with

slight hemoptysis at times, urgent dyspnea, and marked precordial distress. Was unable to lie down even for a few minutes, but lay propped up in bed almost in a sitting posture. Her sufferings were great, and her general condition most alarming. After a consultation with Dr. Ross, we decided not to interfere, but to watch and treat symptoms. Dr. Ross had prescribed strychnine, digitalis and stimulants. I continued on the same line, also prescribed amyl nitrite, to be administered occasionally. Her respirations were rapid, between 40 to 50 at times. Pulse from 120 to 170, sometimes could not be counted. Patient was very carefully watched by the resident assistants, and the head nurse, Miss McKellar. I feared she would not live until labor commenced, but did not feel that I dared interfere. Labor commenced on the morning of January 27, and continued during the day. The os was fully dilated at 5 p. m. Dr. McEachern administered chloroform, the patient being held in the sitting posture on the edge of the bed by two members of the resident staff, while I delivered with forceps. A binder was put around abdomen, and tightened during and after delivery. Fairly free hemorrhage followed and was encouraged. The dyspnea and distress continued for hours. At times we thought she was dying. We gave strychnine and digitalis and small doses of whiskey, but she was still unable to lie down for some days after delivery. About the fourth day the symptoms became less severe. After that, recovery was somewhat rapid, and in one month she went out of the Burnside fairly well. The baby was healthy, though not large, and became a great pet among the nurses. He left the hospital with his mother, under the properly legalized name of Adam Ross Cooper. The onlookers, and others who heard of the case, were surprised at the administration of chloroform under such circumstances, but as I have already discussed this procedure I will only add now that I believe the chloroform was a decided source of benefit to this patient. I have before referred to the prospects if this woman should again become pregnant. Would it be possible for her again to go through pregnancy and labor, and live? I don't know, but I hope she will never try.

Without any reference to mitral insufficiency I have recorded these seven cases of serious heart lesions with one death. It is quite possible, if not probable, that this patient might have been saved if she

had been properly nursed in a comfortable home or hospital. With the worst possible sort of surroundings and the poorest kind of nursing she lived six days after delivery.

I will briefly summarize my views as follows:

1. A woman having a heart lesion which is compensated should not be prevented from marrying.
2. Abortion should not be induced on a woman with heart disease unless very serious symptoms are present.
3. Premature labor should seldom or never be induced on account of heart disease.
4. Mitral stenosis is the most serious heart lesion during pregnancy and labor—aortic stenosis comes next—then probably aortic incompetency. Mitral insufficiency is the least serious lesion.
5. Treatment during pregnancy. Administer the following according to indications: Strychnine, digitalis (or strophanthus), cathartics, nitrite of amyl, nitro-glycerine, and regulate the diet.
6. Treatment during labor. Keep up the action of digitalis (or strophanthus), especially during first stage. Give strychnine and stimulants if required, and chloroform. As soon as the first stage is completed deliver with the forceps.
7. Watch the patient carefully during the third stage (the most dangerous time) and for some days after.

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EXPERIENCES IN INTESTINAL SURGERY.

(Continued from p. 20, June.)

BY MATTHEW D. MANN, A. M., M. D.,

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THE second case which I have to report is one of the first cases of resection of intestine which was done in Buffalo. It is the first case in which I operated upon the intestine.

CASE II.—*Patent urachus. Dermoid cyst. Suppuration of the urachus, with fistula into the bladder. Fistula into the small intestine. Resection. Death.*

Like the first case reported, this one was full of complications and difficulties. The patient was eighteen years of age; I was called to see her in November, 1884. I found a fistulous opening at the umbilicus, which was discharging pus and urine. Exploration of the bladder revealed a large stone—half as large as a hen's egg. This was removed through the vagina, and a fistula established at this point to drain the fistula above.

No benefit followed; and, after waiting some weeks, I opened, throughout its entire length, this tract which led from the bladder to the umbilicus, and which was suppurating. Granulations rapidly sprang up, and the cavity bade fair to quickly close. As the pus diminished, it was quite evident that there was another and different discharge. Seeking for the source of this, I found a small dermoid cyst, apparently ovarian in origin, and opening into the fistulous track. With great difficulty I discovered the opening, enlarged it, and removed the contents of the sac—some dermal tissue, with hair and a small piece of bone. The cyst was about the size of a hen's egg, and quickly granulated. The hole in the top of the bladder had now closed; so I closed the vesico-vaginal fistula by a few stitches.

The bladder gave no further trouble during the course of the case. Granulation proceeded slowly, and in the upper portion of the wound seemed to recede. I was greatly at a loss to explain this, but finally found a small fistula leading into a cavity. The discharge from this was yellow, and looked exactly like that which came from the dermoid cyst.

Supposing that I had another dermoid to deal with, I dilated the opening, and introduced a drainage tube. On my next visit, I found that the drainage tube had disappeared, and then discovered that I had opened into the intestine. The drainage tube, which was of soft rubber, appeared in the stool a day or two afterward. Owing to the dilatation of the opening into the intestine, the discharge was now very free. It was quite evident that the opening led into the intestine not far from the stomach, as food appeared in the discharge very soon after ingestion. The secretions seemed to have the power of digesting the granulation tissue, as it rapidly melted away, and soon there was nothing but peritoneum covering the intestines. Fearing that this would rupture and open the abnormal cavity, I determined to open the abdomen and resect the intestine, and then bring the different layers of the abdominal wall together. This was done, about one inch of intestine being removed. The patient, who had by this time become exceedingly exhausted, stood the operation fairly well, but did not have the strength to rally, and died of shock within the next two hours.

The case, extending over a long pe-

riod, was a very complicated one, and the diagnosis of the different conditions as they arose, presented many difficulties. Had the intestinal connection of the second fistula been recognized early, it might have been closed, or a resection done before the patient became too exhausted. Intestinal surgery in those days was yet in its infancy, and we entered the abdomen with great reluctance. In looking back at the case with our present light, it is easy to see wherein we could have done much better; but fifteen years ago, abdominal surgery had not reached the state of perfection which is now achieved, and my own experience was then very limited. I have never met any case at all resembling it since.

CASE III.—Obstruction of the bowels. Laparotomy. Seat of obstruction not found. Artificial anus in small intestine. Recovery. Later, closure of artificial anus by plastic operation.

April 17, 1886, I was called, by Dr. Thomas, of Cuba, N. Y., to see a case of obstruction of the bowels. The patient had not had a movement of the bowels for a number of days—various cathartics and injections having failed to induce an action. There was fecal vomiting, rapid pulse and rising temperature.

The abdomen was opened, and nearly the whole intestinal tract explored, but the seat of the obstruction could not be found. As the patient was suffering greatly from shock, it was deemed best to make no further exploration, but to attach a loop of the small intestine (jejunum) to the abdominal wound, and then to establish an artificial opening. This was done. Very large movements followed through the opening, and the patient rapidly improved. After granulation had ceased, and the opening had contracted down to a very small point, I closed it by a plastic operation. The patient entirely recovered, and was a nurse in one of our large hospitals for many years. She is still living, and in good health.

CASE IV.—Laparotomy. Removal of the ovary. Second laparotomy two years later. Removal of left ovary. Abscess. Intestine fistula. Operation. Recovery.

Miss McG., patient of Dr. G. Ellis, of Portland, N. Y. In June, 1889, I removed her right tube and ovary, and shortened the round ligaments internally.

Two years later, Dr. H. M. Sims, of New York, removed the left ovary, and broke up adhesions around the stump of the right ovary. An abscess formed at the site of the ligature and a sinus formed, through which the silk was ultimately discharged. A permanent sinus remained, which evidently opened into the intestine, as gas and small quantities of fecal matter were passed.

In August, 1892, the abdomen was opened for the third time. I found that the fistula led into the large intestine. The adhesions were broken up, the intestine freed, and the opening closed without resection. The appendix was removed, and the wound closed after cutting out the fistulous tract. The patient made a prompt and uneventful recovery, neither pulse nor temperature ever going above a hundred.

CASE V.—Obstruction of the bowels. Laparotomy. Breaking up of adhesions. Removal of pus tubes. Recovery.

In September, 1892, I was called to Johnsonburg, Pa., to see this patient, by Dr. Palmer of that place. I found her with all the evidences of acute obstruction. On opening the abdomen, the small intestine was found adherent in the pelvis in such a way as to cause the obstruction. The adhesions were broken up, the obstruction relieved, and the tubes and ovaries, which were suppurating, were removed. The patient recovered.

CASE VI.—Ovarian abscess. Hydro-salpinx. Extensive adhesions. Intestinal anastomosis. Suppression of urine. Death.

Mrs. P., patient of Dr. Goldberg, was

admitted to the General Hospital, April 13, 1893. She had been married three times, but had had no children. For eighteen months she had flowed very profusely at her menstrual periods, and had been curetted several times without result. Two weeks before the operation she was attacked with severe pain in the abdomen, nausea, vomiting and diarrhea. The symptoms persisted up to the time of the operation.

On opening the abdomen, I found an inflamed mass, consisting of an ovarian cyst, as large as a cocoanut, with the tubes, ovaries and intestines all bound together, the left tube being much distended with fluid. With great difficulty the large intestine was loosened, and the cyst, tubes and ovaries removed. A considerable portion of the peritoneal coat having been torn, and the gut greatly narrowed at this point by the bringing together of the peritoneum, it was thought best to make a side-to-side anastomosis, so as to avoid stricture. This was done with the Lembert suture of silk; a drainage tube was placed, and the wound closed.

The patient did very badly from the start; vomiting was continuous, soon the kidneys ceased acting, and she died upon the fourth day, apparently of uremia.

This case presented very great difficulties. The operation on the intestine doubtless had nothing to do with the fatal result. It is quite likely that the kidneys were unhealthy, as the woman had been very dissipated, and that the ether caused the suppression and death.

CASE VII.—Laparotomy for purulent salpingitis. Recovery. Intestinal obstruction on the twentieth day. Second operation. Recovery.

Mrs. F., patient of Dr. D. W. Harrington. Was operated on, October 5, 1894, for pus tubes. Adhesions were extensive, and the operation difficult. The patient, however, did well until the twen-

tieth day, when she developed symptoms of intestinal obstruction. The abdomen was reopened, and a band completely occluding the small intestine, was found and cut. After a long and somewhat tedious convalescence, the patient made a good and complete recovery.

Intestinal obstruction following laparotomy is recognized as one of the complications liable to follow. In the course of these histories, I shall relate several of this kind. The reopening of the abdomen is always exceedingly disagreeable, and is dreaded by the surgeon more than the original operation. It should, however, never be shrunk from when the patient's condition will warrant intervention. In a number of instances I have reopened the abdomen and saved the patient's life. In two cases, movements of the bowels occurred after the instruments and everything were ready for the operation, and as the anesthetic was about to be administered. While a very serious and annoying complication, obstruction is not one which can be easily prevented. Perhaps the present plan of avoiding the use of opiates after operation, tends to make this complication less frequent. Certainly, within the last few years, I have seen a much smaller proportion of cases of intestinal obstruction after laparotomy than previously, when morphine was used more freely. Paralysis of the intestine by its use unquestionably tends to the production of adhesions; while the promotion of peristalsis by cathartics and enemata has the contrary effect, and tends to prevent the occurrence of this unfortunate accident. The after-treatment of these cases has been greatly improved within the last few years; but, even with this improvement, we can never expect to entirely avoid this complication. Prompt intervention, should the symptoms be at all urgent, is always to be urged; and no surgeon should fail in giving his patient every chance for her life, by reopening the abdomen.

(To be continued.)

HYGIENE OF THE BEDROOM AND BEDSTEAD.

BY LAWSON TAIT, F. R. C. S., M. D.,

Birmingham, England.

[Mr. Tait contributed this article to the June edition of the *QUARTERLY* in which it was published. It was his last medical communication to an American Magazine, though he was under engagement to furnish the *QUARTERLY* with other papers. The illustrations which were to accompany this one were not received in season to appear when the paper was first published. They were delayed in transit, and we were reluctantly compelled to go to press without them. Mr. Tait's sudden death, which occurred June 13, 1899, deprived the world of the skilful services of a great surgeon, and the literature of medicine of an able contributor. Out of respect to his memory we republish this paper with the illustrations that he proposed originally to have it contain.—EDITOR, *AM. MED. QUARTERLY*.]

THERE is no article in ordinary life-long use with which we are so closely related, with which we spend so much of our time, which we occupy with such affectionate readiness and leave with such affectionate regret, as our bedstead. Yet how little care is given, certainly but little was given even in the recent past, to the principles of its construction and use; so that personally I feel that everything between the primitive Scotch box-bed filled with a good elastic truss of well-dried heather, and one of Whitfield's Ideal Bedsteads, introduced by that firm as a hospital bedstead with my own name attached, there is nothing to choose. Both of these have excellently well carried out the first necessities of health and comfort, and all between had better be given up. This is the theme I propose to discuss in the following pages, combining in my narrative of the "bedstead as a factor in sanitation," some advice which I regard as wholesome and much needed in the general management and arrangement of our bedrooms. That this advice will be successful I have little doubt from the widespread revolution caused by a little paper which I wrote some twenty years ago on "Bedroom Ventilation," out of which has grown the whole army of automatic ventilating and heating arrangements, combined with and made into

stoves of all kinds, gas and coal burning. Had I patented the suggestions in that paper, I had now been more than a millionaire, but I do not regret that I gave my plan free to the public, as I now give my notions on bedroom management.

It is always useful and full of interest to trace the evolution of any object, whether in the animal form or in the ordinary use of humanity—and the growth of the bedroom and the bedsteads have their interest like other things. From the time of the cave dwellers through the various stages of savage and nomad life, the dwelling space was used for all purposes in common, and it is only after the wandering hunter has achieved fixity of tenure and residence that he discovers the advisability of shutting off part of his house as a sleeping place. This becomes easier as he learns how to use the more permanent kinds of building materials, timber, brick and stone; and as his skill grows so does the fixity of possession and its continuity by descent; so that it practically follows that the bedroom appears with the pursuit of land tenure and culture and the erection of permanent houses. This brings us into the midst of advanced civilization in which in Britain probably we were left by the Romans, the construction of whose bedrooms and bedsteads are quite well known, though neither were well

adapted for permanent use in such a climate as ours. Even with the help of the efficient hypocaust, the comfort of both in Britain must have been difficult to maintain; and when the skilled Italian artificers disappeared from our country in the fifth century we probably went back to the bundle of ling and its skin covering as the ordinary kind of bedding.

The Normans brought back a better kind of domestic building, and when the settlement of the country, toward the fifteenth century, made domestic architecture possible for others than the Norman barons, the English yeoman adopted for his buildings the only material at his hand, the rough oak of his native woods combined with the dab and wattle still seen in the interstices of the beams even to this day, formed from the osiers of the meadows and the mud from the river side. The Norman nobility, as we know from old drawings and tapestry representations, used single bedsteads such as are used on the Continent now. The castles in which they lived were massively built of stone by guilds of imported masons. The floors were level and the doors could be made quite square and fitted fairly well. The windows were provided in the main rooms with well-fixed glass, and at other times with well-made outer shutters, so that the chambers of a Norman castle, with their large fireplaces abundantly supplied with wood fuel, must have been exceedingly comfortable habitations. The enormous thickness of their walls secured a very fair uniformity of temperature, and the downfall of cold air from the walls was modified by the hangings of tapestry. For their bedsteads there was no need of hangings, and, so far as I can find out, they did not use them. But the Saxon farmer had to build his dwelling on lines determined by the curves of the beams at his disposal.

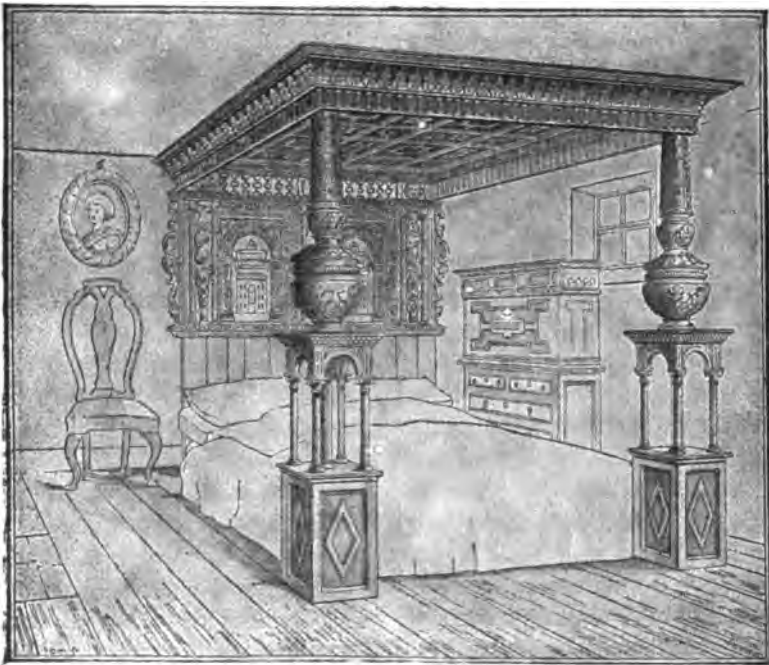
The quaint and picturesque twists of a fifteenth century "oak and wattle"

building are not the results of "settlement" or bad workmanship, and the inequalities of floor level were determined, not by eccentricities on the part of the builder, but were the best he could do with his material. Casements, therefore, and doors could rarely be made true and closely fitting; in fact, they never were till late in the sixteenth century, when we find the beautiful panelings coming into use. "Draughts" in bedrooms must have been, therefore, the rule, and not the exception, alike in manor and in farm house. In the former, as I have said, they rose not from badly fitting doors and casements, but from the downfall of masses of chilled air from the stone walls, and, therefore, tapestries were hung round the rooms to keep warm the occupants of the little Norman bedsteads. The farmers could not afford the costly products of the French looms, and their women had something else to do than spend their time over the tambour frames. Therefore, a smaller apartment was constructed inside the bedroom in the shape of a huge four-post bedstead hung round with curtains probably of common homespun serge, or the box-bed of the north was employed, though no trace of this has been found, so far as I know, south of the Humber. Into such contrivances a whole family must have crowded, possibly with the addition of occasional visitors. This, of course, is an occurrence common enough even now in outlying Highland districts, where the box-bed, with its complete set of shutters, still is in common use.

Such a survival as the Great Bed of Ware, dating certainly from the reign of Henry VII., and perhaps earlier, measuring twelve feet square, represents this first instance of the "room within a room," which was still in use in the vast majority of the well-to-do houses until the beginning of the series of "Great International Exhibitions." Between 1851 and 1861 the French taught us the use

of single bedsteads, and we introduced washstand basins and other lavatory arrangements to their notice; whilst the only permanent advantage either of the nations gained from the Crimean War was the use of the bath and bathroom, taught us by the Russians, widely used now in this country, not so widely in France. The Great Bed of Ware, still preserved in the old timber and wattle Rye House Inn at Hoddesdon, is traditionally said to have accommodated twelve men and their wives; and if we

we now know it occurred as late as, I have already said, in the fifties, and was not fully appreciated till well on in the seventies. Bathrooms began to be added to our houses. We still had grates in our best rooms, with closing registers, so as to preserve that pernicious bedroom odor familiar in all sleeping rooms badly ventilated. The albuminoid substance which produces this smell, in my belief, is the initial stage of the growth of the poison of typhus fever. Four-post bedsteads were still in very



The Great Bed of Ware—Reign of Henry VII.

may judge from what Howard records early in this century as the custom in hospitals and workhouses of the continent and this country as well, in certain places, the statement about our fifteenth century carved oak bedstead need not be regarded as any exaggeration, and we need not wonder at outbursts of plague and pestilence arising directly from such causes. Nor does the moral atmosphere which probably arose from such habits require explicit illustration.

The dawn of domestic sanitation as

common use in the seventies, but the curtains had become mere survivals, as seen in a valance along the top rail and hangings about a yard wide at each corner, only sufficient to show what had been their original purport, but quite ineffective to keep off the draught which at that time was an essential feature of our English bedrooms. The bed I am describing was a large, ungainly object, expensive and uncomfortable, fitted with wooden slats, which resisted all movement, and exercised their uncomfortable

influence through the thickest of mattresses and feather beds. The bedstead was, of course, made of huge slabs of wood, into the interstices of which vermin sought and obtained access, and, once there, could hardly ever be exterminated.

I remember very well that in London it was, one might say, the rule to have vermin in all bedsteads used by the public, as in hotels and lodging houses, and private houses were by no means uniformly free from them. Bugs were the subject of chronic jokes in all humorous writings and in pantomimes, whilst at this present advanced period of the development of sanitation they are never alluded to. This is one of the minor improvements, minor in name perhaps only, which have taken place from the persistent arguments in favor of the simple and effectual cleanliness which is the gospel of all true sanitation.

The first step in the right direction was the introduction of metallic bedsteads, and I remember very well the furore of indignation with which they were met—for nothing annoys an Englishman so much as any interference with his personal habits or belongings. Arguments of the most ridiculous and improper kinds were used on all such occasions. Thus, I have heard it urged by men who were otherwise sane that they would not have gas fires because they could not spit in them, and could not poke them. But metal bedsteads have had their way, and now a house furnished with wooden bedsteads is looked upon with suspicion, and a hotel so provided would have but scant favor in popular estimation. But the old form of bedstead was imitated, of course, as closely as could be, just as the old chariot was imitated in our first railway carriages. The old wooden slats were replaced by a cross-work of iron laths, as rigid and uncompromising as their predecessors. The "half-tester" continued the survival of curtains quite

useless, but of great comfort to the English housekeeper, as unintelligible as that "blessed word, Mesopotamia." Then the bedsteads must be double, to hold two people, in spite of the warning lessons bestowed on every household every time a member of it had an attack of illness. The additional comfort obtained by every English man and woman on a visit to the Continent where they found in their bedrooms two snug little single bedsteads placed side by side, made no impression till about ten years ago, when a few venturesome islanders began to dare the breath of scandal by having separate beds. There can be no doubt that this was the reason why the improvement was resisted, for to this day the proof of the worst that can be circulated concerning a married couple is that "they occupy separate rooms." Separate beds was, and is, to some extent, still regarded as almost as scandalous. Yet in all the best houses in our country each bedroom has attached to it a "dressing-room," with a single bed in it, and by this a great increase of comfort and health is attained. Now that we know that consumption is a disease communicable from one to another by contact and breathing the air already breathed by the consumptive, this hygiene of separate beds ought to receive some public recognition. For centuries the Italian physicians have taught the possibility of the disease spreading from husband to wife and from one person to another, when a tainted and healthy person have occupied the same bed, and there are doubtless many other diseases of which the same is true.

Having now roughly indicated what a bedroom and a bedstead should not be, let me try to show what they should be, and what they easily may be made; and that it is a matter of real urgency to personal health and comfort must come home to everyone when it is remembered that from the beginning of life to

its end we spend more than half our time, and its saddest moments, in our bedrooms and in our beds.

First of all, the capacity of a bedroom should be such as to allow of at least 2,000 cubic feet for each occupant. It should have a flue of at least six inches in clear diameter, and this flue ought not to be in an outside wall, otherwise the chimney is sure to smoke when there is a fire, and it will fail as an up-cast shaft at all other times. Nearly all smoky chimneys arise from the fact that they are built in an outside wall which is too thin. The room should, if possible, be warmed by a gas fire, as in this way only can a uniformity of temperature be absolutely maintained, and for very young and very old people nocturnal variations of temperature are extremely dangerous. But a gas fire is not an old coal grate filled with asbestos. A gas fire must be constructed for the use of gas on entirely special principles. The sashes of the windows should fit well, and in every instance be provided with plate glass, for the reason that nothing assists the variation of nocturnal temperature like the employment of common sheet glass of the jerry builder. In going over the magnificent hospital built lately by the Birmingham Guardians for the old and sick, I had only one adverse criticism to make, that the windows, properly placed on both sides of the large wards, had not been provided with plate glass. The difference in price in the two kinds of glass will be far more than paid for in the difference in the coal bills incurred within the first two years to keep the wards sufficiently warm, for plate glass is a most efficient non-conductor of heat, and this sheet glass is not nearly so efficient.

In all bedrooms the heads of the beds (I assume now that in every case the beds are single, and when there are two that they are placed alongside each other) should have their heads close to an inside wall. If this cannot be arranged,

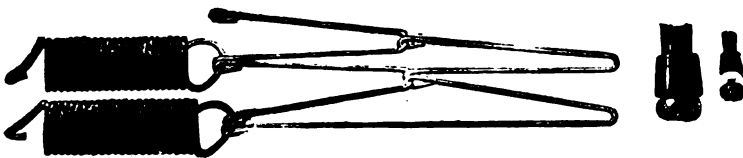
then the wall and the ceiling, for a space corresponding to the bedstead, should be covered with a thick serge, loosely attached to the wall, to prevent the formation of cataracts of air chilled by the cold wall which will otherwise fall on the sleeper. The worst of colds are caught in this simple way in the small hours of the morning, and many a fatal senile or infantile bronchitis might be prevented by this simple expedient. For the same reason, the bed must not be placed between a badly-fitting window and the flue or the doorway. For purposes of ventilation, by far the best plan is the familiar one of making a small space between the middle-bars of the window, by raising the lower sash about two inches against a fixed inner sill plate. In this way a single stream of fresh air is diffused over the ceiling, displacing the foul air, and is diffused through the room at a proper temperature.

For the perfect hygiene of the bedroom there are, of course, very many points of importance into which I cannot enter, as that the walls should be double, with at least two and a half inches of something between them, even if that something be only air; that the outer layer of bricks should be vitreous (pressed Philadelphia or Ruabon); that the doors and windows should fit accurately, and, *most of all*, that the jerry builder should be avoided like poison.

We come now to the important matter of the bedstead, and the only people who require special consideration are those over six feet high, for whom extra length must be provided, otherwise no bedstead need be more, and all ought to be six feet three inches in length, and no bedstead whatever, if constructed on the principles I intend to lay down, need be more than three feet wide—save for a few unfortunate people who are on exhibition. A uniform size of bedstead, interchangeable, would be a distinct comfort in change of houses. The material

must, of course, be some metal, of which the best is steel and the worst is brass. Steel or iron, with the beautiful black enamel now used by Messrs. Whitfield, tastefully set off with a clean Marcella counterpane, makes the smartest and prettiest bedstead in any room, be it in cottage or palace, and it gives the least trouble; but, of course, tastes differ in the matter of material. Both head and

truss. The head-rail and upper legs are framed firmly all in one piece in my ideal bedstead, and so with the foot-rail and lower legs, whilst the frame of the bedstead is a solid parallelogram and a permanent frame for the "Dominion wire mattress"—by far the greatest improvement in modern bedstead making. The adjoining figure will show that this beautiful and unique contrivance is a



The Lawson Tait Bedstead—Latest Model, showing detail of rubber foot pad and springs.

foot rails ought to be finished in a strong, flat arch, an essential feature for the strength and smartness of the bedstead. For strength and steadiness, the head-rail must have four or five vertical bars fully secured into its arch and transom, so that the pillows are not pushed out by restless sleepers, whilst the arch of the foot-rail, not more than six to eight inches high, should have one horizontal bar to prevent any slipping of the mat-

linkage of steel wire in short pieces, bent and hooked so that every two pieces enclose an elongated parallelogram, save at the margin, where they are stayed. If such arrangement were carried over space indefinitely it would mean that any pressure at any point would radiate equally in all directions. But as the frame of the mattress has a length of twice its breadth, the diminished longitudinal strain is supplemented by a supply of strong spiral

steel springs, which serve the additional purpose of giving a point at which detachment of the springs from their frames may be begun, should it ever become necessary to remove them; or, if detached, the process of reattachment ends there. But there never ought to arise any necessity for detaching the springs or wire meshes, for the material supplied by Messrs. Whitfeld is so good and the balance of tension is so perfectly contrived that it never varies. I am far beyond the average weight of male mankind, and I have used the same "Lawson Tait Bedstead" for now nearly seventeen years, and the tension of its springs has never varied in the slightest degree. The spring mesh is tightly secured all round the inside of the firm metal frame, made in one piece, so that the whole bedstead, weighing seventy pounds, and fixed together by bevel key joints or dovetails, comes into three pieces by a few smart strokes from below upwards, delivered on the dovetails on each corner, and for removals these three pieces pack on one another flat, and require only to be tied together by a piece of cord. Compare this with the awful work of removing an old-fashioned four-poster!

Every other spring mattress I have tried has some fatal defect. Either it stretches, and, being secured only at the top and bottom, requires a roller with ratchet wheel and cog for periodical winding up; if not secured at the edges, at every movement the unhappy occupant is fully roused by the harsh grating of the wires against the edges of the frame.

As to the so-called spring mattresses which are formed of a large case filled with the "dice-box" spring or similar contrivance, I can only say they are beyond condemnation as uncleanly, inefficient, liable to breakage, and most uncomfortable, the springs rising rapidly and with force as weight is moved from over them. The individual springs can

never be strong enough, and they are not arranged and cannot be made so as to act collectively. The uniform and co-extensive elasticity of the "Dominion Mattress" makes its yielding effective for all pressures, and yet it is felt at no particular point.

Another of the faults of the old four-posters was that they were far too high, requiring, as we see, in Hablot K. Browne's illustrations of "Pickwick," wooden step-ladders by which to mount into the "apartment." This fault is continued, to the great discomfort of short people and those who are old, feeble and ill. Measuring the bedsteads of a number of first-class hotels, I find that to the upper edge of the mattress, thirty inches and over is the usual height—far too much for any save people much above the average stature. Twenty-four inches to the upper edge of the mattress is far more comfortable for everybody, and the most comfortable bed, in my opinion, in the matter of height, is one on which the occupant can sit with the knee bent at very little more than right angles. For men of average height (five feet eight inches), this will be found to be about seventeen inches, or just the height of an ordinary chair, and this should include mattress and bedding. The legs of such a bedstead would not be much more than a foot long, and the great advantage of this height, with a width of thirty-six inches, will be found in cases of illness in heavy people who require much moving; and this is the greatest test to which a bedstead can be put, for the attending nurses of the present day average only five feet three or four inches.

It was this matter of the bedstead during illness, especially in surgical ailments, which first forced the question of the bedstead and its proper construction upon my notice. In cases of illness, the nurses are fearfully handicapped by an old-fashioned high double bedstead. The number of serious illnesses acquired by

young women, and caused by the strain of lifting heavy and helpless invalids, has been very large in my experience. Therefore, I say, have all your bedsteads single, narrow, low, perfectly rigid, so constructed that the mattresses will not sag, and have a stout steel screw eyelet fixed in the ceiling over the site of every bedstead into which a cord may be fixed when wanted. This question of the sagging of a mattress is of the greatest importance, as a thoroughly depressed bed frame is a trouble even to those who are well; whilst in illness it means inevitably that, however well placed the patient may be, he will shortly work round so as to be on his back—always a helpless position, and one which often contributes greatly to the discomfort of a patient and sometimes even to his death. I have completely cured sagging by throwing the top and bottom rails of the frame carrying the wire mattress into a widely opened arch, so that, when unoccupied, the whole wire mattress is slightly arched upward from side to side, and when occupied by an average weight

the wire mesh is exactly flat. Turning from side to side in such a bed is a matter of ease for even the feeblest, and the inevitable turning on the back is entirely prevented. The ring in the ceiling, which is no eyesore even in the private bedroom, assists most materially in the movement of those who are in acute illness, and who as chronic invalids, without it, could hardly move at all, and would require every movement to be made for them by nurses. We never know when a bedstead may have to bear a bed of illness; therefore, the ring should have a very common presence in all our bedroom ceilings.

Messrs. Whitfield have brought the "Lawson Tait Bedstead" to what I think is final perfection by the india rubber footpad. It prevents noise and jarring when the bed has to be removed, and it is an enormous advantage over the old castor, which was noisy, frequently came off, and then was a source of much trouble. Then the castor, whether off or on, was a potent factor for the marking and disfiguring of a well-faced floor.



NEWSPAPER MEDICINE.

BY NELSON W. WILSON, M. D.,

Buffalo, N. Y.

A FEW years ago the late Brainerd G. Smith, then a member of the old-days editorial staff of the New York *Sun*, when Charles A. Dana was at the helm and purity of English was as much of a virtue in the columns of that newspaper as chastity is in a woman, conceived and carried into execution the idea of a college of journalism wherein young men who had literary tendencies could be drilled and instructed in newspaper writing and educated to be intelligible in presenting pen pictures of events. The idea was of itself commendable, no matter how Utopian it might be. One of the principles of Mr. Smith's plan was to teach reporters the elements of various branches of science in order that they would be prepared to write understandingly on general subjects outside the routine of every-day, commonplace occurrences.

That such education was necessary and is to-day a necessity is shown by the casual reading of nearly every issue of every daily newspaper of any consequence published in the United States.

There is hardly a physician who cannot recall some amusing blunder made by an over-zealous reporter in writing of medical or surgical subjects. The newspapers are full of such errors—some of which, however, are excusable, especially when the subject matter deals with complex questions of medicine or surgery.

One of the most amusing errors which has come under my notice appeared in a Buffalo newspaper. The reporter who was young was present at an autopsy and was very deeply interested. As the organs were removed, he was told what

they were. He expressed surprise at the size of the liver. There was a pathologic condition of the spleen which excited comment among the examiners. The reporter shortly afterward left. The next issue of his newspaper contained this statement:

"A curious condition existed. In addition to the liver being very large, a smaller liver was found some distance away in the left side of the body."

It was the same newspaper that gave the public a most remarkable explanation of how a woman had met her death. The woman had been shot. She was in the street and the revolver had been fired from a second-story window. Here is the statement taken from the newspaper in question:

"The bullet struck her in the mouth, and, glancing from one of her front teeth, was deflected upward. It went through the roof of her mouth and entered the brain, killing her instantly."

As a matter of fact the bullet struck her just under the right scapula, entered the thorax, took a downward, forward course, and was found beside the descending colon.

It was a New York City newspaper which, in speaking of a death from enteritis, volunteered the information that it was "an inflammation of the lining of the stomach."

A Boston newspaper said this of a case of spinal fracture:

"His condition last night was precarious and but slightly improved this morning. He is suffering from a broken spine and severe shock. It is thought that he cannot recover."

A Buffalo newspaper in reporting a case of religious hysteria which came

under my observation in hospital work, said:

"He is a man of middle age with a trouble among his floating ribs. From observation, he says the pain comes on him during seasons when he is greatly excited or worried. He is a member of the Salvation Army, and the seizures are of frequent occurrence."

A Philadelphia newspaper says this in part of its report of a case of belladonna poisoning:

"—— was brought to the hospital about 12 o'clock last night suffering from severe belladonna poisoning. A strong emetic potion was forced into her and after being relieved of the noxious fluid, she partially recovered consciousness.

"Her condition is not critical. The doctors think she will be able to return home this afternoon. * * * She was brought in a carriage to the hospital by one of the occupants of the house, who discovered her writhing in pain on her bed. She positively declares that the poison was taken by mistake. Early this morning her condition grew very serious. The action of the heart became weaker and weaker until its throbbing was scarcely perceptible. A stimulant was given her, but its effect was hardly noticeable. After an hour of careful nursing she revived."

The modern newspaper abandon in disposing of flesh and fractures is shown by these paragraphs from Chicago newspapers:

"—— stopped a frantic runaway yesterday afternoon at the expense of nearly all the flesh that covered his right hand. One of the buckles attached to the harness caught the fleshy portion at the base of his thumb and tore a broad strip of flesh from his hand."

"Yesterday afternoon he was playing ball and tried to stop what in sporting phraseology is known as a 'grounder.' He stopped the 'grounder' all right, but not until he had fractured two bones of the palm of his right hand."

From Buffalo comes the following:

"A horrible accident befell —— yesterday afternoon. —— was in too critical a condition to be questioned concerning the manner of his misfortune.

"He was found near the Erie tracks. He presented a shockingly bloody appearance

when first discovered, groaning and writhing from the excruciating agony he was suffering. His intestines protruded horribly. The clothing surrounding his abdomen was torn away so as to plainly expose the full extent of his terrible injuries. A call was sent to the hospital. The boy was conscious. When the ambulance arrived the surgeon replaced the boy's intestines, placed him on a litter and hustled him into the ambulance. Life depended on the economy of time. The ambulance literally flew back to the hospital. The bleeding form was carried into the operating room and laid on the table. The hemorrhage was very profuse.

"A laparotomy was performed. This consists in the replacing of the intestines and suturing the abdomen. Aside from this injury, which is necessarily fatal, his right thigh was fractured and the flesh near the hip torn and lacerated. The boy cannot live."

Now here is something new in the anesthetic line. Where there is plenty of pus an anesthetic is inadmissible, it seems.

"This afternoon he was brought to the hospital, where the foot was opened and a sliver three inches in length and about an eighth of an inch in diameter was removed. The little fellow showed wonderful nerve during the operation, which was exceedingly painful. *No anesthetic could be used because of the great amount of pus surrounding the wound.*"

To live is to learn; and here is a little information regarding fracture of the skull and paralysis uniquely located. This comes from Buffalo:

"The collision was a disastrous one. His head struck the pavement and he was knocked unconscious.

"He sustained a fracture of the skull and also had a paralytic stroke in the base of his brain."

From a Cleveland paper comes this gem of after-thought:

"Both were badly hurt, but in neither case was it thought the injuries would prove fatal. This afternoon, however, Miss —— died from the shock. It is now believed that her injuries were more serious than appeared at first, and were internal."

But it remained for St. Louis to present the banner case. It is given as an illustration of remarkable vitality. This

man walked nonchalantly into the hospital:

"He stated that he attended a dance last night and about 1 o'clock this morning he got into a quarrel with a man he didn't know. In the course of the fight he was struck under the chin, and felt a sharp pain as if he had been stabbed. His opponent ran away, and a friend bound up his neck, from which the blood flowed freely. He waited until 7 o'clock this morning before he decided to have his injury dressed. He was weak from loss of blood when he entered the hospital. The jugular vein was completely severed."

Going on to anesthetics here is another contributed by Buffalo:

"It was evident from his actions in the station house that he was insane. He ran around like a squirrel, climbed on the desks and chairs and rolled around the floor.

"Late yesterday afternoon the boy's stepfather called at the police station, having heard that George was detained there. He said the boy had wandered away from home early in the morning. George was operated on when he was a little over a year old, and the chloroform given to him caused an affection of his mind. He has never recovered from it. He is about the size of a 6-year-old boy, whereas he is 12 years old."

While Buffalo is handy it might be just as well to present this series of extracts from the report of an attempted suicide:

"According to report, he placed a big cartridge, nearly half an inch in diameter, on the red coals in a cook-stove at his home, bent over it with open mouth and received the bullet. And the wonder is, he lives to tell the tale, although he cannot tell it with his mouth.

"Last Thursday morning at 5 o'clock he got out of bed, ostensibly to dress and go to work. A few minutes later a loud explosion was heard, and when his wife reached the kitchen, he was lying on the floor bleeding copiously from the mouth. She was terribly frightened and knew not which way to turn. She asked him what had happened, but he could not speak. She tried to check the flow of blood. She kept at work over the man for about two hours before she thought of sending for a doctor. Then she sent her little 5-year-old daughter to get a physician.

"The doctor went to the house as quickly

as he could get there. When he arrived he saw a sight that shocked even this man of medicine. He found the man still bleeding from the mouth, and saw lying on the floor near the stove two tonsils and the epiglottis, which had been blown or drawn from his throat by the explosion.

"A quick consultation was held after they had done what they could to check the flow of blood. Then they proceeded as they deemed wisest to handle the first case of this kind on record in Buffalo.

"After the hemorrhage had been stopped, the chief danger lay in the prospect of inflammation setting in and causing a swelling that would close the windpipe and end the patient's life by strangulation. They took a couple of salt bags, filled them with chopped ice and placed them at the patient's throat. They also put some ice in his mouth. By this treatment they succeeded in warding off the threatened swelling.

"Examination of the interior of his mouth showed that the roof was badly lacerated. The interior of his lips also were cut. It took sixteen stitches to mend the lips. But they began to swell and protrude from his face in a hideous way. Pus also formed under them and caused the surgeons much trouble. The swelling has continued steadily since then, and yesterday the lips protruded so far as to give the face an appearance similar to that of an ape.

"The case, from a physician's viewpoint, is one of the most remarkable the profession in this part of the country have had to do with. That a man whose tonsils and epiglottis have been blown out of him should live, is said to be something hitherto unknown here. He has lost his voice, but if he finally survives, the case will go down in surgical history as a record-breaker.

"The doctors are puzzled that no damage was done to the exterior of his face. Not even a speck of powder or other explosive could be found on the skin. One report is to the effect that it was a ball cartridge and that he told the doctor by signs that he had spit it out, and that his wife, wishing to destroy any evidence of attempt at suicide, had thrown the cartridge into the street. Another report is that it was a dynamite cartridge. This is regarded by some as the more plausible theory, because dynamite, when exploded, contracts and draws to, instead of scatters from the centre of the explosion. This action may explain

the drawing out of the tonsils and epiglottis; and, because, if a bullet had entered the mouth it would have plowed through something instead of recoiling from the roof of the mouth.

"He suffers terribly from thirst. He is able to drink, but when he does so some fragment of a cord in his throat gushes out."

The next man shot himself in the mouth. The bullet evidently had a "curve" if this Chicago report is true:

"The ball plowed its way through the upper part of his tongue, and traveled down the left side of his neck, imbedding itself in the left side of the spine. His left arm and leg are paralyzed. The surgeons have small hope of his recovery."

This from Buffalo savors of the miraculous in so far as deep burns do not cause disfigurement:

"While removing the ashes from beneath the boiler of his engine this morning about 3 o'clock, the door of the furnace flew open, and the flames and cinders expelled by the powerful draft shot into his face, blinding him with the thick, hot soot which embedded itself in his eyes, causing him the keenest agony."

"When taken to the hospital, he was a most unsightly object. The soot had blackened his flesh, made raw by the intense heat of the flames. Cinders were embedded in his scalp and what hair was left on his head was a tangled mass, full of the soft coal soot. He was destitute of eyebrows or mustache. Although burned deep, the surgeons are of the opinion that he will not be much marked or disfigured. Skin-grafting will probably be necessary about the neck and shoulders."

From San Diego, Cal., comes a report of an aneurism in which the following paragraphs occur:

"—— died last night of aneurism of the aorta. In plain English, this means a rupture of the greater artery leading from the heart. The aorta was so ruptured as to allow the blood to dilate the outer coat, forming a tumor filled with blood, which obstructed circulation."

"——, who was a resident of Denver, consented to undergo an operation about a year ago, which was novel and interesting. He was placed upon the table and his breast bared for the knife. An electric battery of great strength was at hand, provided with gold wire

of thread-like diameter. A surgeon opened ——'s breast, found the tumor and inserted thirty inches of gold wire in it and turned on the electric current. The result was such an intense heat that the blood in the tumor was forced back into its proper channel.

"—— rallied and came to San Diego for change of climate. He suffered a fatal relapse this week. A post-mortem examination was made yesterday, and it was found that the coagulated blood has entirely departed from the tumor. Surgeons regard the operation as wonderfully successful, and correspondence will be instituted with the Denver surgeons who performed it in order to learn further facts concerning it."

A physician was "sterilizing catgut in boiling alcohol" and his clothing caught fire. A New York reporter wrote these paragraphs in telling the story of the accident:

"Across the lawn to the operation section of the hospital he wildly ran, the flames enveloping him from head to foot. Unannounced, the man of flames threw open the door of the operating room, dashed in among physicians, nurses and attendants, who were busy performing a delicate operation on a morphine-unconscious woman, and before they recovered from their fright, the man was so seriously burned that his recovery is most improbable."

"When Dr. —— entered the operating room the surgeons were at the most critical stage of their work."

"'Save me!' he yelled to the chief surgeon, as he bolted into the room, 'or I will be burned to a crisp.'"

"It is a remarkable thing that the young woman on the operating table never recovered consciousness during all the excitement. She was entirely oblivious of all the exciting events that transpired until she came to and was told of them. It is doubtful whether she would have stood the fright if she had come to when the burning man rushed into the room."

A physician suffering from "muresthenia, which brought on indigestion," is what a New York reporter wrote in detailing the story of a doctor's attempted suicide after giving his wife what he believed was an overdose of morphine. This doctor drank an ounce of carbolic

acid, and cut his throat. Then the reporter states:

"The physicians sewed up the edges of the wound in the throat and bandaged it. None of the important arteries had been cut, although the insane man had swept the razor from ear to ear. The deepest part of the incision was in the *æsiophagus* or windpipe."

These are a few of the most interesting of the many clippings in my scrap book.

For many of these statements doctors are to blame. They do not, as a rule, in giving information to newspaper men make things clear; they are too prone to use technical terms. The inevitable result is that reports are misleading, garbled and ridiculous. Newspaper men will not violate confidences, as a rule, and

a closer relationship between hospital physicians and surgeons and newspaper men would work wonders in the way of making scientific matters clear to the general reading public.

Since the foregoing was written a New York newspaper has added to the newspaper medical literature. It was stated that a patient had died of *opisthotonos*. According to the writer of the article *opisthotonos* is a very rare disease and is always fatal; the victim's body bends until his heels and head touch. The climax of absurdity was reached in the grand final struggle of descriptive realism, when it was stated that *opisthotonos* "is first cousin to tetanus."

FOUR CASES OF INFANTILE MONSTROSITY IN THE SAME FAMILY.

Hestle (*Va. Med. Semi-Monthly*) relates the following interesting and peculiar history: A mulatto girl, healthy and well-formed, was married to a strong, healthy negro, aged twenty-five. Her first child was stillborn at about the seventh month. It was a male and had neither arms nor legs nor auricular appendages. The hands and feet were well developed and attached immediately to the well-developed body. The following year she was delivered of a normal, healthy, female child. The third birth was of the same character. At the fourth, fifth and sixth labors she gave birth to monsters exactly like the one at the first labor. They were all males, and the arms, legs, and auricular appendages were in each instance absent, the hands and feet being attached to the body. About the third month of the first pregnancy her brother entered her room at midnight with a living opossum, which he threw on her bed, frightening her very badly. From that time on she suffered much uneasiness lest her child should be deformed. Nothing unusual occurred during the remainder of the term. While pregnant with the second and third children she was not frightened at all. During each of the last three pregnancies she was frightened about the third month of gestation

by seeing an opossum, and she suffered from an almost constant fear that the child would be deformed. This fear was naturally much stronger after she gave birth to the second monster. It is well known that the legs of the opossum are very short, and his feet, therefore, close to the trunk, while its auricle is rudimentary and almost invisible on casual inspection. Hestle does not attempt to explain the connection between the fright and the birth of the monsters, but considered the remarkable coincidence as worthy of note.

EUCALYPTUS AND MALARIA.

Investigations, under orders from General Brooke, says the *New York Medical Journal*, have been instituted in Cuba with reference to the *eucalyptus globulus* as an antimalarial agent. This tree, which is largely planted in the Roman Campagna and by the French in Algeria, is said to have rendered former malarial districts much less unhealthful. The City of Mexico is cited as another instance, where the Vigo Canal, the floating gardens and other malarial districts are now well stocked with young trees, with the result that places which were once marshy and unhealthful have been rendered dry and salubrious. General Wood is reported to have strongly endorsed a requisition for these trees for Santiago.

NEW BOOKS.

THE GROSS AND MINUTE ANATOMY OF THE CENTRAL NERVOUS SYSTEM. By H. C. Gordinier, A. M., M. D., Professor of Physiology and of the Anatomy of the Nervous System in the Albany Medical College; Member American Neurological Association. With 48 full page plates and 213 other illustrations, many of which are printed in colors, a large number being from original sources; pages 589. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. 1899.

Since the appearance of the classical work of Professor John C. Dalton on the anatomy of the human brain, no American author has entered this field on so large a scale as has Gordinier. The excellent classical treatises on this subject by Schwalbe, Obersteiner, Edinger, and Flatau, in Germany, Férè and Déjerine in France, Retzius in Sweden and others, cover the foreign field very well, but with the exception of translations of Obersteiner, Edinger and Jako, the English-speaking physician and student have had no work of their own since Dalton. The long wait has been productive, however, of a book comparable to all, and even superior to some of the foreign works, and brought an addition to American neurology alike creditable and praiseworthy.

This treatise consists essentially of the lectures that the author has been accustomed to deliver to his students, amplified, rearranged and handsomely illustrated. It is, therefore, a volume which has reached its maturity by years of slow, steady growth and not a book made to order or subjected to forced artificial propagation. Of the former the science of medicine has far too few, of the latter far too many. Its mode of origin bespeaks for it a careful, painstaking arraignment of the subject, embracing the classical, undisputed discoveries and ideas of the past, at the same time thoroughly impregnated with the best modern thought and finding. Care and skill

in the weaving together of the new with the old has produced a good, strong presentation of the whole subject, of which a careful perusal will convince.

Chapter I. is devoted to the histologic elements of the nervous system, embracing the histology of the nerve cell—nerve fibres, nerve terminations, vessels—and a good description of the neuron or neurodendron. The author refers to the “protoplasmic processes of Deiter,” which perhaps is unfortunate, as most authorities connect Deiter's name with the axis cylinder process of the nerve cell. The author gives Schmidt, of New Orleans, the credit of the discovery of the incisures in the myelin, while Continental writers give exclusive credit to Lantermann. This chapter, one of the most important in neuro-histology, is handled very adroitly and clearly by the author, and is accompanied by beautiful colored plates and diagrams.

Chapter II. is devoted to the anatomy and histology of the spinal cord. The newest researches are embodied regarding the origin, course and termination of the various tracts of the cord, mention being made of Ciaglinski's sensory tract in the gray matter, which needs much confirmatory evidence. The author would have been fully justified had he termed the “Lissauer tract” the Spitzka-Lissauer tract, as both investigators described this part of the cord simultaneously, and in some quarters both names are associated with it.

Chapter III. takes up the “Medulla oblongata, or bulb.” The author traces the different tracts upward through the medulla past the crossway in a very intelligible manner, particularly when one remembers that the anatomy and histology of the medulla is the most difficult and elusive in the whole body. The illustrations in this chapter are not so good as in the preceding and especially that on page 145, which is worthless. It seems rather strange to read of “Medulla Oblongata,” “Pons Varolii,” and other

polyonyms, when the mononyms Medulla, Pons, Insula are generally accepted at the present time.

Chapter IV. deals with the epencephalon or cerebellum; Chapter V. with the region of the mid-brain, the corpora quadrigemina, the peduncles and the nuclei of the cranial nerves situated in this vicinity. The author gives the generally accepted theory regarding the oculomotorius nucleus, that it consists of a "series of centers arranged from before backward, as the accommodation center, the center presiding over the reflex action of the iris to light, and the centers for the innervation of the muscles." Some very fine illustrations accompany this chapter.

Chapter VI. treats of the region of the third ventricle, Chapter VII. of the fore-brain, and Chapter VIII. of the membranes of the brain.

Chapter IX. is devoted to the histology of the cerebral cortex, together with the minute anatomy of the centrum ovale, and Chapter X. to the general anatomy of the interior of the cerebral hemispheres. The value of the different silver methods of staining is clearly apparent in these chapters, and in the illustrations the effect is most happy. The scheme showing the development of our knowledge of the different cell layers of the human cerebral cortex from the time of Vicq d'Azyr in 1790 to the time of Cajal in 1890, on page 341, is unique and shows at a glance the immense stride which neuro-histology has taken. Although taken from Déjerine it shows how alert the author has been to incorporate the best and most original, from whatever source they may have come. Turning from the anatomical and histological we meet the physiological in Chapter XII., where the author takes up the most important subject from a clinical and scientific standpoint in connection with the nervous system,—the question of cerebral localization. The ideas of Hood, Flourens and Bouillaud, the brilliant discoveries of Fritsch and Hitzig, Broca, Munk and Ferrier, pioneers in the field of cerebral localization, are all carefully reviewed and the newer discoveries based on clinical and experimental observation thoroughly analysed and digested. In regard to the cortical centers for general sensations the author states that it is

now generally accepted that both motor and sensory centers in man occupy in common the region about the fissure of Rolando. This statement is correct as to the majority of investigators; some, however, will not subscribe to this assertion, but they are in the minority.

Chapter XIII. is devoted to the embryology of the central nervous system and is exceedingly well written. In Chapter XIV. the author describes the technic of the macroscopic and microscopic examination of the brain and spinal cord, giving all the more important formulæ of the various staining mixtures.

A carefully prepared index adds greatly to the general usefulness of the work.

Gordinier's efforts are to be heartily commended. He has succeeded in a field recognized as the most difficult and most trying, and has given American neurology a capital book on neuro-anatomy and neuro-histology. It is a pity, however, that he did not avail himself of the newer terminology, and also that so many misspelled proper names were allowed to creep into the text.

Much credit is due the publishers for the excellent manner in which the book is dressed.

WILLIAM C. KRAUSS.

NERVOUS AND MENTAL DISEASES. By ARCHIBALD CHURCH, M. D., Professor of Clinical Neurology and Mental Diseases in the Northwestern University Medical School, Chicago; Professor of Neurology in Chicago Polyclinic and Neurologist to St. Luke's Hospital, Chicago, etc.; and FREDERICK PETERSON, M. D., Clinical Professor of Mental Diseases in Woman's Medical College, New York, and Chief of Clinic, Nervous Department, College of Physicians and Surgeons, New York. Illustrated. Philadelphia: W. B. Saunders. 1899.

These authors have succeeded in presenting the subjects of nervous and mental diseases in a clear and direct manner. Each author is entirely responsible for the work in his own department, Dr. Church in neurology, and Dr. Peterson in psychiatry.

Dr. Church has chosen to present his subject in the language most familiar to the largest number. He uses the old

anatomical terms. We look in vain for neurons, neuraxons, or for the anatomical changes recommended by Wilder, and adopted by Mills in his work on nervous diseases.

For this reason there will be less confusion in reading the work, as the reader does not have the trouble of translation to add to the natural difficulties of the subject. The first part of the book is devoted to a general consideration of the method of examination of the patient in reference to the condition of the motor, trophic and sensory systems. The method of examination of the special senses and of the function of speech completes this section. Part 2 is devoted to a very satisfactory treatment of the subject of the diseases of the cerebral meninges and of the twelve cranial nerves. The discussion of cerebral localization is extremely careful; he accepts the experiments of Ferrier as his guide. He ranges himself, as do now the majority of neurologists, with Ferrier, in localizing the auditory center in the first and second temporal convolutions, which are in relation with both ears. This accords with the now generally accepted view that to have complete cerebral deafness there must be bilateral lesions destroying both gyri. Of the many methods for defining upon the scalp the Sylvian fissure he prefers as the simplest the plan of Anderson and Makins, of London. This is surprising, for in our judgment the cystometer of Horsley, or the folded paper of Chiene, are more simple and accurate.

The chapters in which the various diseases of the brain and spinal cord are considered are well-written and sufficiently illustrated.

No one reading these descriptions of diseases can fail having a clear, well-defined idea of the subject.

The only part that we would generally criticise is the subject of treatment.

It has always been our opinion that a book of this kind should be so complete and thorough as to make the reader conversant with the author's exact method of treatment.

Definitions of such vague terms as a full dose—a moderate dose—will vary with different authors. Just the size dose of a drug intended to be given should be stated.

For instance, in discussing insomnia, he says a dose of trional should be given. In the treatment of migraine he says "caffein will sometimes abort an attack. Others by taking a large dose of bromid will occasionally escape."

In exophthalmic goitre he recommends, in a general way, digitalis strophanthus and strychnin, but says not a word as to how he would use them.

He says "hydrotherapy and massage are of use in some cases." There is not a word to enlighten us as to how he would use hydrotherapy; there is not in such writing any guide for the student. There is nothing but vague hinting that certain things are used. This is a fault that is so common with many writers that we feel it right to call attention to the fact and plead for more accurate definition and exact information as to what an author's methods of treatment are.

The work of Dr. Church concludes with a discussion of hypnotism. We agree with the author in his estimate of this subject. "It is as yet of very little service to the physician. It tends to destroy self-reliance and to make patients imaginative, weak-minded and neurasthenic."

Part II., by Dr. Peterson, is a condensed consideration of insanity and idiocy.

The various forms of insanity are well-described; illustrations of typical cases do much to help the student in diagnosis. The treatment advocated by Peterson is in line with the most advanced views of modern psychiatry. In the treatment of idiocy, or rather in the care of idiots, he advocates most earnestly the colony system. In a condensed way he gives an admirable idea of the pedagogical treatment of idiocy. The medical care of the idiot includes a well-defined hydrotherapy.

An omission in this joint work is any consideration of alcoholism—delirium tremens—opium habit. We regret this, as to the general practitioner these subjects are of much more importance than some of the rarer forms of disease. In another edition the value of the book to the general physician will be greatly increased if the authors include the treatment of drug habits.

The volume is one of which the au-

thors should be proud. The work is fully up to the standard of this well-known house.

JAMES WRIGHT PUTNAM.

ATLAS OF DISEASES OF THE SKIN, including an Epitome of Pathology and Treatment. By PROF. FRANZ MRACEK, of Vienna. Authorized translation from the German. Edited by HENRY W. STELWAGON, M. D., Ph. D., Clinical Professor of Dermatology, Jefferson Medical College, Philadelphia; Physician to the Department for Skin Diseases, Howard Hospital; Dermatologist to the Philadelphia Hospital, etc. With 63 colored plates and 39 full-page, half-tone illustrations. W. B. Saunders, 925 Walnut street, Philadelphia. 1899.

The author's design has been to supply a hand-atlas of such moderate dimensions as would make it serve as a ready hand-book for clinical reference, or to answer the requirements of those who engage in the practice of general medicine or dermatology—its object being a reproduction, in convenient form, of typical cases of the more common skin diseases, as well as some of the rarer affections, in color and half-tone, with a concise and intelligent presentation of the practical and fully established facts concerning their pathology and treatment.

However, to fulfill the wants of rational therapeutics, its introductory pages, which merely touch on the subjects of anatomy, physiology, and etiology, are, perhaps, somewhat unnecessarily short, and might, with advantage, have been modelled more with a view to lead up to or dovetail into the subsequent descriptions of the pathological changes or processes.

For the importance of making a correct diagnosis, it is manifest, throughout the work, that the basis of classification is rather histological than etiological, the much better plan for a definite recognition of the various cutaneous maladies. This is essential, and its value cannot be overestimated, as no satisfactory method of treatment can be formulated, unless the morbid changes are clearly understood and appreciated with an endeavor to ascertain the numerous factors which induced these alterations or functional disturbances.

Under the individual name of each disease, these peculiarities are briefly, but most accurately, described, clearly pointing out the histological process as an indispensable accomplishment in dealing with the almost infinite variety of skin manifestations.

For the adoption of proper treatment, the directions are found concise, conservative, and modern. The circumstances, which enter each case, are carefully and summarily considered, including, in many instances, a multitude of well-selected formulæ.

The accompanying illustrations are beautiful, and of the highest artistic excellence, and are well worth the attention of the student of dermatology. As to their descriptions, and the history given of each individual plate or case, we have nothing to say that is not laudatory. The plates are certainly a scientific and faithful likeness of the diseases which they represent.

The publishers have produced a magnificent hand-atlas that has never been equalled in cheapness of price.

ERNEST WENDE.

ATLAS OF EXTERNAL DISEASES OF THE EYE. By DR. O. HAAB, of Zurich. Edited by G. E. DE SCHWEINITZ, M. D., Professor of Ophthalmology, Jefferson Medical College, Philadelphia. With 100 colored illustrations. W. B. Saunders, Philadelphia. 1899.

This concise little work of 228 pages is a complete, though brief, treatise on the pathology and treatment of the external eye diseases. It should be in the hands of every student of ophthalmology who has not had the advantages of a large eye clinic, as it is profusely illustrated in colors showing the appearance of the eye and lids in diseased conditions. Many little practical hints not found in other works on the eye are brought out, particularly in his opening chapter on the examinations of the eye in disease.

External inspection, examination of the cornea, and testing the acuteness of vision, are all described in sufficient detail to aid any student in becoming a careful diagnostician. Haab's method of writing and recording prescriptions for glasses strikes one as rather crude, but the advantage of following this method would be the ease with which any opti-

cian could find the axis. In measuring the light sense he describes Förster's photometer. We regret that he evidently has not seen nor heard of the card that Mr. Hartridge devised for this purpose, which does away with the necessity of any apparatus.

Some attention is paid to the detection and recording of the various recognized insufficiencies, but his tests for muscular imbalance are meagre and disappointing. We might say in this connection also that in common with other German and English authorities refraction is ignored as a factor in producing many eye troubles. The editor has made a note of this on two or three occasions.

In diseases of the lachrymal apparatus he seems to think the chief cause of epiphora is hereditary predisposition. The editor takes exception to this statement and we think he will be sustained by the profession on this point. In calling particular attention to the lachrymal sac's containing often the most virulent pathogenic germs which are primary not secondary to the catarrh which follows, he has done a service to every ophthalmologist who operates on the eye. This fact is often forgotten or ignored until a violent inflammation follows closely after some simple operation. Haab's methods are conservative in the treatment of diseases of the lachrymal apparatus. He advises treatment of any nasal catarrh by medium-sized probes, or as a last resort extirpation of the lachrymal gland. If he uses probes at all he advises those of medium size and only trying these on cases of recent origin. The contributions on erysipelas, herpes zoster and eczema are interesting, the differential diagnosis being especially good. Congenital ptosis, ectropion and entropion are mentioned with scarcely no suggestions as to treatment.

The diseases of the conjunctiva are well described, although the author's classification differs somewhat from any in this country. He advocates the use of lead washes which have been almost entirely discarded here on account of the danger to the eyesight. Corneal affections are well discussed with nothing specially new offered; the same may be said of diseases of the iris and ciliary body. Glaucoma is taken up briefly and the work is concluded with diseases of the orbit.

The illustrations are for the most part excellent. Unfortunately, however, the ambition of the artist made him attempt to depict glaucoma and exophthalmos, which has never been done successfully, to our knowledge. Aside from two or three illustrations of this sort the clinical aspect is really marvelous in its faithful representation of various eye diseases.

RICHARD H. SATTERLEE.

THE PRACTICE OF OBSTETRICS. By American authors. Edited by CHARLES JEWETT, M. D., Professor of Obstetrics in Long Island College Hospital, Brooklyn, N. Y. In one 8vo volume of 736 pages, with 441 engravings in colors and black and 22 full-page colored plates. Lea Brothers & Co., publishers, Philadelphia and New York. 1899.

To teach obstetrics adequately at the present day requires a rare equipment in everything that pertains to medicine and surgery. In other words, the obstetric teacher must be competent to deal with every emergency that may arise in the practice of the healing art. That the editor of this work is such a man, will become apparent to any one who will carefully examine the treatise that he presents for the scrutiny and guidance of the student and practitioner of obstetrics. He has grouped around him competent men to write upon the various branches of the obstetric art, has assigned them with rare judgment, and, over all, he presides with dignity and skill.

The treatise is divided into eight parts, the first one being devoted to anatomy. This is a comprehensive chapter written by William W. Browning, professor of anatomy, etc., in Long Island College Hospital. His anatomic descriptions are concise yet ample, and everywhere betray a knowledge of the obstetric art as well as of anatomy. He, however, confines himself closely to his subject, without pedantry or verbosity, mixing just enough physiology to give clearness of understanding. He is especially fine in dealing with the ovary and mammary gland—two very important subjects that must be carefully studied by every obstetric student. His illustrations are well adapted to the text and, whether diagrammatic or real, leave nothing to be desired for such a treatise.

In the next or second part the physiology of pregnancy is considered, the first chapter of which is written by Walter P. Manton, adjunct professor of obstetrics at the Detroit College of Medicine. It presents three subjects to our notice—menstruation, ovulation, and the development of the ovum. The first two are briefly described without circumlocution or argument, and especially without discussion as to their relationship, the author contenting himself with asserting that they are not necessarily coincident processes, but that they usually occur simultaneously and are more or less interdependent. This in such a work we think wise, for it would be only confusing to enter into an argument merely to prove a theory which after all might turn out to be wrong. In that portion of his chapter in which he deals with the development of the ovum, Manton is clear, concise, conservative and complete. His illustrations are admirable.

The third chapter in the book considers the changes in the maternal organism and is by Chauncey D. Palmer, professor of gynecology in the Medical College of Ohio. It contains all that need be expected on this subject. Coming now to the diagnosis of pregnancy (Chapter IV.), we find a most excellent exposition of this important question by Robert L. Dickinson, instructor in obstetrics at Long Island College Hospital. He points out the difficulties of diagnosis in the early weeks of pregnancy, and devotes much space to the changes in the second and third months. It is during this period, while the signs are few and less pronounced, that an opinion is often urgently demanded. His treatment of the subject is methodical and his directions are ample without being laborious. Physicians of experience have been mistaken in spite of great care and, as an illustration, it is pointed out that Vander Veer has collected 68 cases where operators have opened the abdomen for supposed pathological growths, finding, instead, gravid wombs.

In the next two chapters, which do not need special comment, the duration of pregnancy and its hygiene and management are considered. The physiology of labor is taken up in part three, in which the editor writes two chapters, his first subject being the mechanical ele-

ments of labor. These are of course the expellent powers, the passages, and the passenger, and are considered in the order named. The expulsive forces are muscular, the uterine being involuntary, while the abdominal and pelvic are under the control of the will in part. Jewett next gives an excellent study of the bony pelvis which he amply illustrates with cuts, drawings and diagrams. His expositions of the measurements of the dried and dynamic pelvis are superb and deserve careful study by the novitiate.

The passenger or fetus next receives attention, wherein the various presentations, positions and postures are clearly described in terse English. The practical obstetrician appears here in every sentence and paragraph and the illustrations make obscure points clear, even to the student of average intelligence. After careful study of the chapter there need be no excuse for confounding axes and planes, presentations and positions, as so often happens with even advanced pupils.

In the next chapter Augustus H. Buckmaster, professor of gynecology and obstetrics at the University of Virginia, writes upon the mechanism and clinical course of normal labor. It is a well-drawn word-picture of classic labor and is supplemented by numerous illustrations that add to the value of the chapter. We next find the management of normal labor discussed by the editor in the ninth chapter of the book. The fullest details are herein given as to all that pertains to this important office, the various methods of examination, abdominal and vaginal, being amplified and illustrated. In this chapter, too, one of the best expositions of obstetric antisepsis with which we are familiar is given, and this is a subject that everyone who attends a woman in labor must thoroughly comprehend and be able to put into practice. The detailed management of the several stages of labor are discussed seriatim and directions for conducting it in various positions are given. The best illustration of Welcher's position that we have seen is portrayed in plate XI., facing page 237. There is also an excellent picture of the abdominal binder, in situ, on page 246.

The physiology of the puerperium next receives attention and forms the

subject matter of part IV., and chapter X. dealing with the puerperal state, is written by Hunter Robb, professor of gynecology in the Medical College of Ohio. It is a masterful chapter, to be read with profit by every physician liable to perform the duties of accoucheur or to care for the puerperal woman. Among other things Robb sets his foot down hard upon so-called "milk-fever." He states the whole case in a single sentence as truthful as it is brief: "Milk-fever is traumatic fever and traumatic fever means infection" (page 254).

The new-born child and its management is the next subject, and it forms an excellent chapter, full of practical details, written by Elias H. Bartley, professor of chemistry and toxicology in the Long Island College Hospital. The obstetric physician is too apt to neglect a supervision of the new-born infant and trust too much to the nurse in this matter. This chapter carefully read and pondered will do much to stimulate a revolution in this practise, and thus contribute to the health of the infant as well as the comfort of the mother. Bartley's directions for artificial feeding, sterilisation, and other essentials to promote the healthy nourishment of the infant, are such as should be adopted by mothers and nurses when the natural food supply fails or is unsuited to the purpose. What he says, too, in regard to the care of prematurely born infants is to be commended.

The pathology of pregnancy forms the topic to which part V. is allotted. Chapter XII., multiple pregnancy, is written by Walter P. Manton, in which he discusses twins as the type, since the management of the others does not differ in its principles. Anomalies and diseases of the fetal appendages form the subject matter of the next chapter, which is presented by James H. Etheridge, late professor of obstetrics and gynecology in the Rush Medical College. The pathology of these diseases and the descriptions of the anomalies are clear and scientific. What he says upon hydatiform degeneration of the chorion, or vesicular mole, the only disease of the chorion commonly met and which was formerly called hydatid pregnancy, is commended to the careful study of students and practitioners. The pathology

of the fetus, discussed in chapters XIV. and XV., by Joshua M. Van Cott, Jr., professor of pathology in the Long Island College Hospital, furnishes much of interest to the student of teratology. In a work like this the diseases of the fetus can only receive brief notice, but Van Cott has met all requirements in this respect.

Naturally great interest, especially for young practitioners, centers in whatever pertains to abortion and premature labor. The chapter relating to these subjects, XVI. of the book, is prepared by Hiram N. Vineberg, gynecologist to the St. Marks and Mt. Sinai Hospitals, and is a meritorious essay. He defines abortion as the expulsion of the products of conception before the sixteenth week; premature labor as the delivery of the fetus between viability and a period within a few weeks of term—say between the twenty-eighth and thirty-sixth week of gestation. This leaves a period of eight or ten weeks unaccounted for, and if the fetus is expelled during this time he proposes for it the name of "immature labor." The earlier writers usually termed it "miscarriage." This is a term sanctioned by usage, and since there are admittedly three divisions of time to be assigned to this act, we can see no objection to adhering to the old and pretty firmly established classifications. At any rate, it is confusing to students for obstetric teachers to split hairs over this matter and we could wish that all would agree upon uniformity in their teaching in regard to it.

In discussing habitual abortion a singular error in a well-known proper name occurs. E. J. Jenks undoubtedly should be E. W. Jenks. Curiously enough the error reappears in a foot-note. It is said that a soldier, wounded in battle, very much dislikes to see his name spelt wrong in the newspaper reports. We have no doubt an author feels similarly when a corresponding error occurs in a text-book.

Ectopic gestation forms the subject of chapter XVII., which is written by Fernand Henrotin, professor of gynecology in the Chicago Polyclinic. Great interest attaches to this condition since its pathology was cleared up and its treatment established, mainly by the researches of Mr. Lawson Tait, lately de-

ceased. Before Mr. Tait elucidated the subject women by the scores and hundreds were dying because, in part, their conditions were not diagnosticated, and in other part because of the timidity of obstetricians. Now, thanks to Mr. Tait and his followers, all this is changed; even the rural practitioner detects the lesion early, and either operates promptly himself, or hastens to summon an abdominal surgeon who will do so for him. And yet in this entire chapter we find no reference to Mr. Tait. It is, however, a fairly good exposition of the subject; but we regret the editor did not invite either Joseph Price, L. S. McMurtry, or Charles A. L. Reed to prepare the monograph relating to this important abnormality of pregnancy. They have each had a large experience in dealing with it and either of them would have given a masterful exploitation of this direful affection.

Next comes a consideration of the diseases of pregnancy, chapter XVIII., presented by James H. Etheridge. In discoursing upon the vomiting of pregnancy he writes well in relation to what he terms pernicious or uncontrollable vomiting. We think hyperemesis would be a better name for this condition; it is simpler and expresses the precise phenomenon that is present; whereas, uncontrollable is only relative. In fact only the rarest number of such cases ought to be uncontrollable. The profession of medicine is chary about the induction of abortion for the relief of this horrible state until, generally speaking, it is too late. It is far better, in our view, to resort to this means of almost certain relief and cure before the patient is in extremis. It is a good deal like postponing the operation for appendicitis until the pathology has progressed beyond cure. Etheridge, however, has written well on this subject and has expressed the latest views of advanced obstetricians upon it. So, too, we may say of what he has written upon the other diseases of pregnancy. Another curious error in a proper name occurs in this chapter—S. H. F. Campbell being printed for Henry F. Campbell.

The next following section, part VI., deals with the pathology of labor, the first subject (chapters XIX. and XX.) being entitled anomalies of the mechanism, of which J. Chalmers Cameron, professor of

midwifery, and J. Clarence Webster, lecturer on gynecology at McGill University, share the authorship. The first chapter treats of anomalies of the expellent forces, the chief interest for the practical obstetrician centering in uterine inertia, which is one of the most trying conditions with which the young physician may be confronted. This chapter records all that is of known value concerning this and the other conditions with which it deals. The two subjects allotted to chapter XX., the anomalies of the passage and the anomalies of the fetus, are excellent in their arrangement, material and method of presentation. Kyphotic and rachitic pelves and other deformities, anomalous states of the soft parts, malpositions of the uterus, and new growths—all are scientifically handled. These and many other conditions that may obstruct, delay, or prevent labor from being normally completed, each and all are considered briefly or in extenso, according to their importance. Anomalies of the fetus, too, are amply described and all their various phases set forth. These two chapters in fact constitute an important part of the book, one, too, which is exceptionally well presented.

Anomalies from accidents or disease constitute the subject of the next, or chapter XXI., written by Etheridge. These comprise prolapse of the funis, inversion of the uterus, rupture of the uterus, rupture of the symphysis pubis and thrombosis of the vagina and vulva. The first is of frequent occurrence, comparatively speaking; the others are rare. Rupture of the uterus is the tragedy of obstetrics and when complete must be dealt with promptly by abdominal section. Etheridge in effect so advises. Rupture of the symphysis is usually produced by artificial causes, the forceps being credited with the majority. Of course the unskilful use of the instrument is implied, for it could happen only in the rarest instances to experienced operators. It would be interesting to dwell upon this chapter, but neither time nor space will permit.

The hemorrhages are allotted to chapter XXII., considered jointly by Etheridge and Jewett. These always possess absorbing interest to the obstetrician; whether the novitiate or the veteran; first, because they are dangerous, and,

second, because they test the resources of the art. Placenta previa, which occurs once in a thousand labors or thereabouts, is a condition demanding judgment to deal with and prompt action to prevent disastrous results. All the forms of this anomaly and the several methods of treatment applicable to each are amply set forth. The use of bags—Barnes's, McLean's, Tarnier's and Champetier de Ribes's—are described, but whoever finds them practical when confronted with an emergency? The theory of the lecture-room and the clinical reality seldom fit in this dilemma. Podalic version is the one safe measure and it ought to be insisted upon that it should be resorted to early, instead of temporising until it becomes inadmissible by reason of a loss of a great volume of blood. These authors give wise council in this exigency of labor.

Post-partum hemorrhage also receives sound practical handling with their pens. This emergency arising in its severity tests the mettle and skill of the accoucheur and, moreover, permits of no delay. He must act for himself and at once. As might be expected these writers rise to the occasion and give wholesome advice.

The next chapter, in which eclampsia is considered, is from the pen of J. Clifton Edgar, professor of obstetrics, Cornell University Medical College. This is one of the most interestingly presented dissertations on this extremely interesting subject that we have seen. He regards it as a toxemia, but very properly does not attempt to define it or specifically name it. Edgar's preventive treatment is all that need be. His curative treatment, too, is superb. We differ from him as to the value of *veratrum viride*, but applaud heartily all that he says of chloroform and the induction of labor. We have elsewhere (*Trans. Med. Society, State of New York, 1897*), given our opinion in detail on this subject and need only add, if Edgar's views are accepted as a guide, that as much of success as is possible to obtain in the management of this direful malady will assuredly follow. We are sorely tempted to pursue this subject further, but must hasten to avoid weariness, for other matters await our examination. A short chapter on diabetes and cardiac disease, by Etheridge, closes this part.

Coming now to part VII. we find the pathology of the puerperium presented. First comes anomalies and diseases of the breasts and nipples—chapter XXV.—by Van Cott. Sore nipples and "broken breasts" have been from time immemorial the plague of the young mother until now, recognising their infectious nature, we are able to reduce these conditions to a minimum under proper management. Van Cott tells how in few words and in well-chosen sentences.

Puerperal insanity, by Allan McLane Hamilton, professor of mental diseases in Cornell University Medical College, is the subject of chapter XXVI. He is interesting in his method of handling it, but of course it is from the standpoint of the alienist, hence treatment is the topic of greatest value in this essay. He thinks the septic origin of the disease from the uterine cavity has been overestimated in importance, though regards it probable that absorption of the products of intestinal putrefaction play something of a part in its etiology. In this relation we invite attention to the paper of Dr. Brush printed elsewhere in this magazine.

We now reach a chapter of transcending importance, written by J. Whitridge Williams, associate professor of obstetrics of Johns Hopkins University, and which treats of puerperal infection. He starts at the beginning, tells of Semmelweis's work and then gives the history of the several micro-organisms that infect the genital tract and the part they play in causing morbid local and systemic affections. He next describes the lesions caused by them from vaginitis to phlegmasia alba dolens, which latter should be termed more properly puerperal phlebitis. He is especially thorough in describing the modes of infection and leaves little to be added to what he says concerning their preventive or curative treatment. He gives everybody who has thrown any light on the subject full credit and, as might be expected from so careful a writer, his foot-notes are voluminous—a commendable point. This monograph should receive the most careful study to be appreciated.

In the next chapter, XXVIII., malformations, injuries and diseases of the newborn child are presented by Henry

Dwight Chapin, professor of diseases of children in the New York Post-Graduate Medical School and Hospital. In dealing with asphyxia he describes and illustrates Byrd's method, giving it commendatory indorsement, which we think wise; but we are sorry not to be able to say as much of Schultze's. However well the distinguished professor at Jena may succeed with it, we fear that few others can do as well, especially young practitioners. There is much in this chapter of interest and it has been well presented.

Obstetric surgery has been reserved, and very properly so, for the eighth and last part of the work. Hunter Robb writes chapter XXIX., in which immediate repair of vaginal and vulvar lacerations is considered. His description of the lesions of the perineum are clear and properly estimated, while his methods of repair are surgical. This is a condition to which the earlier text-books gave very little heed, but now that its importance is better appreciated obstetricians teach with insistence that a ruptured perineum, even in the lesser degrees, must not be neglected. In our view there is no duty of the obstetrician more imperative than to repair immediately these lesions, no matter how trivial they may seem to be. There is, moreover, no minor operation that contributes so much to the comfort of the patient as this. Robb passes the torn cervix with brief comment, because, unless the circular artery is rent, the operation need not be primary. Under the sub-head "methods of operating," there appears to be an imperfect sentence. * * * "and stitches are of about one inch apart from above downward," which should probably read "and stitches should be placed about one inch," etc.

The next chapter, XXX., dealing with the induction of abortion and of premature labor, is an excellent exposition of these subjects. Robb's description of the several methods and his estimates of their comparative value are to be highly commended. Many authors speak of this and that method without sufficiently describing them. Robb has not made this mistake. Retained and adherent placenta are conditions that occasion anxiety, but they are here explicitly handled.

In chapter XXXI., the forceps is con-

sidered by the editor. From beginning to end this chapter bears the impress of the practical obstetrician. It deserves the careful study of every young physician, and it may be accepted as a guide to the successful employment of this instrument.

Version and embryotomy form the subjects of chapters XXXII. and XXXIII., both written by Edward P. Davis, professor of obstetrics at Jefferson Medical College. They are both considerate expositions of the subjects and are presented in clear English and forceful sentences. Davis advises embryotomy in but two conditions: first, when on first seeing the case the physician finds a dead fetus larger than the birth canal; and, second, when a monstrosity is present. The soundness of this teaching cannot be successfully challenged.

The final chapter presents Cesarean section, the Porro operation, and symphyseotomy for consideration. It is written by Hunter Robb, who in this instance, as hereinbefore, has done his work well. In the historical sketch of Cesarean section the types make him say "In 1881 Rousset published a treatise," etc., when evidently it should read "1681."

Symphyseotomy as an alternative for Cesarean section, where the conjugate is narrow enough to forbid the selection of version at term or the induction of premature labor, and yet not small enough to render Cesarean section imperative, Robb thinks may be considered as justifiable. Nevertheless, the operation is difficult of performance and apparently is less popular than a few years ago. Robb makes the steps of the operation appear clear and the after-treatment, so important, is well set forth.

In concluding this synopsis of this treatise we desire to state that it has not been the intention of the reviewer to present a hypercritical analysis of the work of the several authors, but rather to mirror to the student and young practitioner the essentials of the volume. We wish that we could have been more thorough in our attempt to portray its value, but our time and space has placed a limit upon our inclinations. While it is not a work entirely above criticism, it is yet so nearly so as to make it easily the most valuable of the recent text-books on ob-

stetrics. Imperfections are so few as to make them comparatively unimportant.

It is seldom that a text-book written by several different authors is so free from repetitions as is this one; indeed, were it not otherwise announced one could conceive it possible for the editor to have written it all. Its typography and arrangement of subjects are superb, its illustrations considered as a whole are exceptionally appropriate, while many are works of art both mechanically and obstetrically viewed, and, withal, the book is of convenient size, even smaller than might reasonably be expected from the enormous amount of material presented.

Finally, in our judgment, teachers, students, and practitioners of obstetrics, may very properly unite in a cordial vote of thanks to the editor and his staff, for creating one of the most modern, comprehensive, and best text-books of obstetrics extant.

WILLIAM WARREN POTTER.

THE INTERNATIONAL MEDICAL ANNUAL AND PRACTITIONER'S INDEX. A work of Reference for Modern Practitioners. Seventeenth year. New York: E. B. Treat & Co. 1899.

For seventeen years E. B. Treat & Co. have issued an annual review of the progress of medicine for the benefit of students and practitioners. Every department of medicine has been thoroughly scrutinized by a corps of contributors consisting of some of the ablest American and foreign physicians, and the result is a reference library of the greatest value and importance to the busy practitioner and to the student in search of information on some particular subject.

These volumes, uniformly edited and bound, make a handsome set in the physician's library, and he instinctively turns to them when in search of literature on certain diseases or when seeking the latest contributions to materia medica and therapeutics. The issuance of one book annually is accomplished by a process of repeated condensation and pruning, whereby only the most salient points or the more important advances in therapy are incorporated. This is of no little importance to the physician whose time is limited and who desires the best

or latest with the least expenditure of time. It is not an index medicus, nor do the publishers proclaim it as such, but it is merely a condensed report of what progressive scientific investigators in medicine are doing the world over.

A general plan in make-up is followed in all the volumes, beginning with a therapeutic review of the past year, in which those drugs which have proven their medicinal worth are mentioned and also those which have proven worthless. These reviews are of great value to the physician, particularly the knowledge imparted to him concerning worthless remedies. The journals are constantly telling him of good results and rarely does he find an author courageous enough to relate the ill success of treatment with a certain drug or drugs. In Treat's Annual no quarter is shown, failures are reported along with successes.

Then follows a dictionary of new remedies, those introduced within the year and a repetition of the more important drugs of the year previous, with indications for use. This is always an interesting chapter and fully appreciated by the reader.

Articles on special subjects, especially engaging the attention of the profession at the time being, follow, written by recognized authorities both at home and abroad. Among such special articles may be mentioned: "Practical X-Ray Work," "Climatic and Open-air Treatment of Phthisis," "Electro-therapeutics," "Hypnotism and Suggestion," "Atlas of Bacteria Pathogenic in the Human Subject," "Legal Decisions Affecting Medical Men and the Public Health," "Antimicrobial Treatment," "Malaria, How to Observe the Parasite," "Diagnosis of Toothache and Neuralgia of Dental Origin," "The Remedial Value of Cycling," "Sensory Distribution of Spinal Nerve Roots," "Angio-Neurosis," and so on. Sometimes five or six of such special articles are found in one Annual, always elaborately and profusely illustrated and worth alone the price of the book. These subjects are always up to date and generally are the best exposition of the subject at the time of the appearance of the Annual. Following these articles comes the Dictionary of New Treatment, the body of the book. Some of the articles in this department are

treated monographically and others briefly, according to the amount of attention they have received during the year. References are also made to articles on the same subject in previous Annuals and the reader thus has a great fund of information at his finger's end. Many of these articles are accompanied by handsomely colored plates, or photographs and photo-micrographs of high artistic merit. In describing the treatment the remedial agents are printed in bold-faced type, making them conspicuous and not easily overlooked. In the miscellaneous department which immediately follows are described the improvements taking place in sanitary science. Here are discussed such subjects as practical sanitation, as applied to the house and factory, disinfection, water supply, sewage purifications, infectious diseases and so on. These chapters for the past nine years have been written by Joseph Priestley, Medical Officer of Health, Lambeth, London. Important chapters on Progress in Pharmacy, by Dr. John Aulde; New Inventions and Instruments described during the year, edited by Dr. Irving Haynes; a list of the principal medical books published during the year and a good general index wind up this annual encyclopedia of medicine. The publishers are interested in their work, as evidenced by the painstaking labor expended in getting out the best and newest irrespective of cost or inconvenience.

The volume for 1899 is in many respects superior to any of its predecessors. In the first place, it is larger, containing 760 pages; and secondly, it is better and more profusely illustrated, having no less than 15 full-page colored plates and 12 full-page half-tone plates, besides a generous supply of illustrations scattered throughout the text.

The number of special articles and the high professional standard of their writers, as the following list will disclose, make this book the banner volume of the series and one to be highly prized by any book lover: Practical X-Ray Work, by Norris Wolfenden; Advances in Skull Surgery, by Seneca D. Powell; Surgical Treatment of Paralysis, by Robert Jones and A. H. Tubby. These articles are freely illustrated, chiefly by reproductions and photographs. An excellent

article on Climatic Treatment of Consumption, by F. de Havilland Hall, as well as one on Legal Decisions Affecting Medical Men, by William A. Purring-ton, will be found interesting and pertinent. In response to the request of many subscribers there will be found an article on The Chief Pathogenic Bacteria in the Human Subject, with descriptions of their morphology and methods of microscopical examination, by S. G. Shattock, the pathological curator of the museum of the Royal College of Surgeons, London, illustrated by a series of finely colored plates.

The article on Mastoid Operation, by Dr. J. Dundas Grant, is an excellent one, clearly described and nicely illustrated.

Fox's article on Electrolysis in Skin Diseases is of merit and shows the good effect of the electrolytic needle in skilful hands.

The other departments are all up to the high standard of previous volumes and fully abreast of the times.

These Annuals are uniform in quality, price and appearance, and deserve a place in every physician's library. When once introduced, the time of their annual appearance is looked forward to with much expectancy and delight.

WILLIAM C. KRAUSS.

AMERICAN POCKET MEDICAL DICTIONARY. Edited by W. A. NEWMAN DORLAND, A. M., M. D., Assistant Obstetrician to the Hospital of the University of Pennsylvania; Fellow of the American Academy of Medicine, etc. Second edition, revised. W. B. Saunders, Philadelphia, 1899.

Nowadays every medical student needs a pocket dictionary of medicine which he can make available in the lecture-room, at the clinic, and in the laboratories. The constantly increasing vocabulary of medicine makes this next to a necessity, if the student would make any attempt to familiarize himself with the words and terms that are used daily during his college life, by his teachers and others with whom he comes in contact. A new word, one unfamiliar, or the definition of which is unknown, should be looked up at once, else it may be forgotten until the expression is repeated, and then there may come regret if not embarrassment. And this is the reason

he must have his pocket lexicon and have it in his pocket.

The only question is, which one of several good ones on the market will he choose? The one under discussion contains the pronunciation and definition of over 26,000 words and terms used in medicine and the kindred sciences, as well as over sixty elaborate and useful tables. It is printed on thin, strong, clear, white paper, the words being in heavy-faced type, and the definitions, though in smaller type, are sharply printed, making them easily readable. While the definitions are of necessity somewhat brief, they are yet clear and adequate for the purposes of such a book. It is in every sense a vocabulary quite up to the immediate present, arranged in strictly alphabetical order.

It is bound in red flexible covers of strong leather, which makes it very durable and it is thumb-indexed—a matter of no small convenience. The tabular matter, too, is of much importance. This revised edition has been cleared of a few typographical and other minor errors which the first contained, and it certainly appeals to the reviewer as being as near perfection as it is possible to make such a dictionary. Whoever purchases it and uses it diligently in the field it is intended to occupy can assuredly make no mistake. * * *

Books have been received as follows:

THE SEXUAL INSTINCT; Its Use and Dangers as Affecting Heredity and Morals. By James Foster Scott, B. A. (Yale University), M. D., C. M. (Edin-

burgh University); Late Obstetrician to Columbia Hospital for Women and Lying-in Asylum, Washington, D. C., etc. Octavo, pp. 436. New York: E. B. Treat & Co. 1899.

THE HYGIENE OF TRANSMISSIBLE DISEASES; Their Causation, Modes of Dissemination and Methods of Prevention. By A. C. Abbott, M. D., Professor of Hygiene and Director of the Laboratory of Hygiene, University of Pennsylvania. Octavo volume of 311 pages. Illustrated. Philadelphia: W. B. Saunders.

THE TREATMENT OF PELVIC INFLAMMATIONS THROUGH THE VAGINA. By William H. Pryor, M. D., Professor of Gynecology, New York Polyclinic; Consulting Surgeon, City (Charity) Hospital, etc., etc. 12mo., pp. 248. With 110 illustrations. Philadelphia: W. B. Saunders. 1899.

THE PATHOLOGY AND TREATMENT OF SEXUAL IMPOTENCE. By Victor G. Vecki, M. D. From the Author's Second German Edition, revised and rewritten. Duodecimo, pp. 291. Philadelphia: W. B. Saunders. 1899.

A TEXT-BOOK OF DISEASES OF THE NOSE AND THROAT. By D. Braden Kyle, M. D., Clinical Professor of Laryngology and Rhinology in Jefferson Medical College; Consulting Laryngologist, Rhinologist, and Otologist, at St. Agnes' Hospital, etc., etc. With 175 illustrations; 23 in colors. Philadelphia: W. B. Saunders. 1899.



THE EDITOR'S DESK

THE FAITH HEALER'S IDOLATRY.

The somewhat startling proportions into which the various forms of belief in the efficacy of prayer to heal disease has grown, justifies a full and unimpassioned discussion of the subject in the medical journals and magazines. While the healer confined his work to those persons who had reached the age of discretion and limited their pretended ministrations to diseases of benignity or to affections of the imagination, no great harm could result. But, emboldened by the pretense of success on the one hand and by the indifference of the general public on the other, he is stimulated to invade fields that make him a dangerous member of the body politic, if not a downright outlaw.

He denies the contagiousness of disease, sends infected children to the public schools, and spreads contagion with a recklessness that brings dismay to the intelligent and thoughtful citizen. He says diphtheria is not fraught with danger because it is not susceptible of transmission from person to person; he treats scarlet fever in the same manner that he would a stone bruise, and even denies that there is such a malady as small-pox. An epidemic of cholera would be a camp-meeting revel and the bubonic plague a carnival of faith-curing glory in which he would display the wonderful healing powers of his divine gift. A touch, a blessing or an invocation, and lo! they vanish into thin air, into the realms of immunity, where disease is unknown and where suffering cannot enter.

Nay, more; cancer, consumption, syphilis and gonorrhea cannot exist, because there is neither disease, curable or incurable, nor contagion, infection or heredity.

But the faith healer does not stop at disease; he offers his ministrations at childbirth and would pray in the midst of the alarming flooding of placenta previa or post-partum hemorrhage with the same assurance and confidence of success that the prestidigitateur boils eggs in a new silk hat borrowed from an auditor to whom he promises it back unsullied, or exhibits the vanishing lady to a surprised assembly. A ruptured uterus, puerperal eclampsia, and a two and a half inch conjugate hath no terrors for him, while as-

phyxia and ophthalmia neonatorum are purely fictions of an unbelieving imagination.

Our progressive and aggressive "healer" even would invade the domain of surgery and undertake the care of a broken leg or a wound of the intestines, praying the fragments into apposition, or the several tissues into continuity. But we need not call attention further to the absurdities, inconsistencies or impossibilities which this strange sect would practise. At first glance these claims may seem apochryphal to the reader. We beg to assure the incredulous that they are not exaggerated. We have heard some or all of these claims made, in reality or impliedly, in a public audience chamber.

During the past few months the daily newspapers have contained many accounts of the workings of these singular people, and the victims of their practises are becoming so numerous as to make the record positively startling. Especially is this the case among children or young persons below the age of responsibility. Misguided parents have assumed to deny them the aid of regular medical attendants, and they have been allowed to die neglected and, in many instances, in the agony of suffering. All this, too, in the closing year of the nineteenth century, admittedly the most enlightened period of the world.

The dangers to the public weal from the unrestricted practice of these methods, and the propagation of these dogmas of faith cure are apparent, and sooner or later must arouse an indignation that will be as swift in judgment by contrast as it has been slow to anger.

Meanwhile the difficulties in correcting the evils are many, and are not easily overcome. Prosecuting attorneys are often tainted with the belief or have been told that some of their constituents have been cured through the ministrations of the accused "after the doctors had given up" the patient. Grand jurors, too, arise in their places, pending the consideration of a proposed indictment, and tell of the wonderful cures that have been performed within their own knowledge by the prisoner. Lawyers, also, of greater or less distinction can always be found to espouse the cause of a healer in the toils, and cunningly distort the facts to

prove that these people do not practice medicine because they prescribe no drugs.

There is another great danger that threatens the miscarriage of justice in these cases. Judges are likely to be chosen from among these same lawyers, hence the bench may become a propagandist of this monstrous faith.

In a former issue the *QUARTERLY* took the ground that the existing statutes are all-sufficient to meet the demands of justice in these cases. We still think so; but it, nevertheless, remains for the public to become well informed as to the dangers that lurk in the midst of indifference, and to demand an obedience to the laws that relate to the practice of medicine in the several States. They are framed in the interests of the people for their protection against ignorance and deception. Let them be obeyed!

THE TEACHING OF LEGAL MEDICINE.

The time is not far distant when progressive medical colleges will add the subject of legal medicine to their courses. Medical jurisprudence, it is true, is taught in almost all colleges, but legal medicine is not; and by legal medicine is meant that particular study of the dead body which deals with wounds, and the manner and method of their infliction, and the time of death; the length of time a body has been in water, not by guess-work, but gauged by actual and visible conditions. It also deals with all legal matters of a purely criminal character. Deplorable, yet true, is the fact that there are few physicians who can do little more than guess at many of the conditions which arise in a case of homicide.

The ordinary detective can do that and in the larger cities where the detectives are men of wide experience, they are, as a rule, infinitely better guessers than the average physician.

The trade-marks of murder and suicide are easily recognizable to the physician who has made a study of legal medicine. Such a man will be able to say positively that the rope was placed about the neck before or after death, where a body is found hanging as if in suicide, and where murder is suspected.

A recent case, in one of our inland cities of importance, will illustrate the wide range of guesses, and the advantage of a knowledge of legal medicine. A body had been found, partially dismembered and packed in a box, which was floating in the water of a canal. There was no question as to how the man had met his death. The cause of death, stab wounds

in the chest, was apparent. A number of physicians examined the body, and there were nearly as many opinions regarding the length of time the man had been dead in the water as there were physicians. The guesses ranged from two days to two weeks.

A visitor identified the dead body. But the man he named had been seen alive within two days, the shortest time any of the physicians had guessed the body had been in the water.

Then came a physician who had studied legal medicine. He examined the body and declared it had not been in the water twenty-four hours. He had post-mortem conditions to go by and he explained them. The mystery was later cleared up and it was shown that the body had been placed in the water not more than twelve hours before it was found. There are arising constantly cases in which medical opinion is sought to aid in unraveling the tangled skein of a murder mystery. In cases of this character the value of expert evidence is apparent, but the evidence should be scientifically expert—that of a specialist—beyond question and not merely a haphazard guess, which is not susceptible of logical explanation.

Medical colleges graduate men and certify them as well-qualified to practise medicine, yet a very small percentage of these recent graduates could examine a dead body and confidently explain how and when death came. And when one considers that in many instances the life of a human being hangs in the balance, to be swayed up or down by a physician's opinion, it is easily understood why lawyers have taken up the study of medicine in its application to criminal law.

THE U. S. PHARMACOPEIA AND NEW DRUGS.

Where can we get information that is to be relied upon concerning new drugs?

A very important question in medical and pharmacal circles is that of the future scope and usefulness of the U. S. Pharmacopeia. The question is being forced upon us by the multitude of new substances which are being evolved out of the activity of brain and hand of the pharmaceutical chemist, all of which claim recognition on the ground of exceptional therapeutic value. And the saddest comment upon present-day therapeutics is that so many practitioners are ready to give to any new substance, that is sufficiently advertised (it matters not how) to impress them with a possibility of its value, the place that

should be occupied only by our older drugs of well-known merit; and that solely upon the statements of its manufacturer. Even the careful practitioner, who desires to employ only what is scientifically attested, is bewildered before the quantity of "stuff" which the postman and expressman daily deliver to him, among the mass of which there surely must be something of value.

The condition probably could never have grown so bad if the present-day physicians had a better knowledge of the older, reliable drugs, and of the resources of the Pharmacopeia and the National Formulary in aiding them to prescribe. The average physician at graduation feels that his groundwork in pharmacology is insufficient. He is timid about prescribing. Consequently he may tend toward scepticism as to the value of drugs, but he is in especial danger of falling a prey to the "new drug" fakir. But that is a matter for the colleges and they must, and doubtless will, for the future, enforce improvement in that direction.

Unfortunately the chief source of information upon any new substance is the circular of the interested manufacturer, containing, it may be, the endorsements of physicians obtained undoubtedly in good faith, but usually coupled with so much that is improbable or unnecessary as to lead to its speedy consignment with disgust to the waste basket. We repeat our question: Where can we get information that is to be relied upon concerning new drugs?

Facing the situation squarely there seems to be no way of meeting the need implied in the query, unless we break away somewhat from time-honored customs in respect to our standard of drugs, the U. S. Pharmacopeia.

The medical profession has neglected this book. The time was when it was our exclusive possession and we revised it. But since the very valuable assistance of pharmacy has been asked, we have gradually allowed the pharmacal profession to contribute more and more to it so that the present volume represents the wishes of a convention in which the majority of delegates represented pharmacal interests. We welcome the pharmacists to this work, but let the medical profession as well rally to its duty in the next convention.

Our question is one that may require a new departure. It seems to us that the profession has the right to ask that the pharmacopeial authorities establish some means of aiding us to sift the wheat from the chaff in respect to new drugs. This would be a decidedly novel

move. But there is nothing except precedent to determine what shall be the work of the pharmacopeial convention of 1900 or of the committees that it creates. The matter is entirely within the power of the professions of medicine and pharmacy. The work is our joint possession to improve as we think best.

Besides, a departure of this kind need not interfere in the least with the established scope of the book itself. It ought to remain just the valuable standard that it is, with probably some modifications in order to make it of greater practical use to physicians. Some impetus has been given to discussion along this line through the efforts of the committee of the Medical Society of the State of New York, whose latest circular contains the proposition: "That an annual supplement of a few pages be issued for the purpose of giving reliable information concerning new drugs."

This seems to us to be an admirable suggestion. It would require an extension of the duties of the Committee of Revision, or the creation of a sub-committee or bureau to take up the new work. And it is fortunate that the work of the present Committee of Revision has been so pre-eminently successful that, beside the cost of revision and publication and the expenditure of several thousand dollars in research work, the committee can still report a number of thousands of dollars on hand from sales of the present edition.

The committee is to be congratulated upon its success and the two professions may be thankful that there are funds for the prosecution of disinterested research. But we argue that this work should now be enlarged so as to include new drugs. Let the proper sub-committee take up every new substance that has the probability of value in it and investigate it chemically and pharmacologically, reporting the information gained in a small annual pamphlet issued under pharmacopeial authority. Nothing would attract physicians to the Pharmacopeia more than such information issued in connection with it. And this leads to another aspect of the subject. While under the present committee's direction the Pharmacopeia has become a source of income for scientific purposes, there is still a very meagre sale of the book among physicians. If the next edition can be made more useful to them the sales, and consequently the net income, can be largely increased. This book, the property of medicine and pharmacy, in which no individual has any financial interest, can be made the center of a bureau of important scientific work in pharmaceutical chemistry and pharmacology. There is great

need of such work. There are funds for it. Shall it be undertaken?

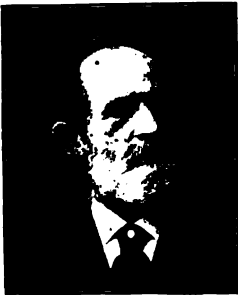
This and kindred topics relating to pharmacopoeial revision and improvement deserve the earnest attention of the medical profession from now until May, 1900, when the decennial convention will occur. We trust that our journalistic confrères will lead out in discussion of the same.

THUMB NAIL SKETCHES.

One of the most prominent figures of the profession in America is Dr. Albert Vander Veer, of Albany, professor of abdominal surgery in the Albany Medical College. The first impression one receives of Dr. Vander Veer is the quiet dignity of the man which is intensified by his silver gray hair and his deep set eyes.

He is calm under all circumstances; in fact, he is what one might call a restful man. His pleasant geniality is one of his distinguishing traits, and he is one of the most approachable and companionable of men. Students in the Albany College find in Dr. Vander Veer a willing counsellor and a sympathetic friend.

His work as a surgeon is characteristic of the man. He is not at all of the dashy, brilliant school of younger men, but is in his operative work just as he is in his every-day life—calm, quiet, dignified and collected. He



is preëminently a safe operator and adviser, and of late years his extensive experience has led to his being very frequently called in consultation, even at great distances; so frequently, in fact, that consultations make up a large part of his practice.

Dr. Vander Veer's eminence in the medical profession may be judged somewhat by the large number of societies and associations which have elected him to honorary membership. He was a warm personal friend of Mr. Lawson Tait, and when that great surgeon visited this country a few years ago, he was Dr. Vander Veer's guest at Albany and delivered a lecture to Dr. Vander Veer's class at the Albany Medical College.

Dr. Vander Veer's eminence as a teacher and as an author are among his chiefest claims to renown. His students are carefully prepared for the lifework before them, and

his voluminous and able contributions to the literature of medicine are often quoted in text-books, in medical societies, and in the clinics.

He was a distinguished surgeon in the Civil War, and is a companion of the Military Order of the Loyal Legion. He is yet in the vigor of a ripe manhood, and gives promise to continue in his good work for many years.

In the field of abdominal surgery few men have achieved the distinction of Dr. Joseph Price, of Philadelphia, whose operative work has made him famous.

Dr. Price's personality is an interesting one. He is full of nervous energy and is a tireless worker. His conversation is what might be called breezy, because of its multiplicity of ideas. He is never at a loss for a moment, and is incisive in his every movement. In personal appearance he is rather above the medium height, with hair plentifully besprinkled with gray and a mustache to match. His face is cut on clean lines, not at all full, but extremely pleasant at all times. In conversation the oddity of his features is remarkable; in his work or when he is in deep thought, one can almost see him think.

A casual observer can see at first glance that Dr. Price spends more time in thinking of his work than of what will be the next prevailing style in clothing. That is one of the reasons he has been so successful. His life, his every thought, all his energy is devoted to his profession.

There are many curious little mannerisms about Dr. Price. One will do to illustrate his impressiveness. When he talks and he becomes deeply interested, he emphasises his remarks with an out-pointed index finger. He leans forward slightly at such a time, and looks his hearer directly in the face, and one cannot help thinking: "This man means just what he says." Then, when he reaches a most emphatic remark he places his finger on his cheek. That is a Price mannerism. Then he jumps up at the conclusion of the talk and thrusting his hands into the pockets of his coat walks off with a quick, nervous step. Sympathetic and tender he is with patients and his visits through the wards and private rooms of his hospital brighten up the inmates wonderfully.

Dr. Price is a frequent contributor to journals of medicine, and is often heard before medical societies.

He was graduated from the University of Pennsylvania in the class of 1877 which gave

to the profession, to quote from Dr. James K. Young's introduction to Dr. A. Sydney Roberts's lectures on orthopedic surgery, "several men who have since distinguished themselves in the different branches of their profession: James M. Anders, Joseph Price, Matthew N. Cryer, Francis X. Dercum, Henry F. Formad, Thomas H. Fenton, Isaac C. Gable, Herman Haupt, Jr., William Hobson Heath, William C. Hallopeter, Rush S. Huidekoper, Fairfax Irwin, John H. Musser, J. Wilkes O'Neil, Andrew J. Parker, George A. Piersoll."

Price started out to do abdominal sections soon after graduation. He went into the lower sections of Philadelphia and got to

work. He operated in tenement attics, and in court-yard hovels and in alley cellars. Later he wrote a paper reporting his cases and his work. His hearers looked askance at him, and wondered at his audacity. Then his report was questioned by some one who didn't know Price. At once he overwhelmed his critic and the doubters with proofs. He showed his cases. He had worked and slaved in by-ways and alleys, and he was famous. Such is Dr. Joseph Price, of Philadelphia, one of the greatest abdominal surgeons of the day, —by many considered the greatest. He has, at all events, opened the abdomen for disease and injury more times than any living surgeon.

OPEN LETTERS.

"CONTRACT SURGEONS IN THE ARMY."

Apropos of the remarks in your editorial under the caption "Contract Surgeons in the Army," in your June edition, I would like to add a line or two.

It seems but right that all surgeons—those of the regular establishment, volunteers or engaged under contract—that are doing active duty and for more than a temporary period should have equal pay, emoluments and advantages for equal service. In time of war the contract surgeon feels ill at ease without a uniform, especially so when the volunteer surgeon working with him is so clothed. In peace and doing temporary duty that same uniform becomes a burden—financially, at least, for uniforms are expensive. Were the contract surgeon killed or disabled in action, or if he dies or is disabled by disease in time of war, it would seem that a pension would be forthcoming. But why should he—a contract surgeon—in time of peace be entitled to a pension any more than the physician in private practice who has exposed himself to smallpox, yellow fever or other dread disease with equal fortitude, suffered the consequences, and very probably did not receive remuneration of any kind? Do not these peculiar risks belong rather to the regular military surgeon, or in time of war to the regular military surgeon and his auxiliary—the volunteer surgeon. Should we not recognize three classes of military surgeons, i. e.,

the regular surgeon, his peace auxiliary the contract surgeon, and his war auxiliary the volunteer surgeon. True, all these were in evidence during the Spanish-American war, but that is no reason why we should do legislation for future benefit on a misunderstood basis.

Military surgery is a specialty, as much so as any other branch of medicine, and just so much beyond the ability of the general practitioner as any other medical specialty. That it is a specialty is hardly realized by the practitioner at large.

It takes three months' hard labor and close attention to the school of the soldier to enable the raw recruit to take on the habit of the army and be converted into available material. It takes many more times this to convert the average civil practitioner into a military surgeon, let his professional abilities be of the highest. A knowledge of military hygiene, camp sanitation and food supply is of the utmost importance to the military surgeon, and are subjects not to be grasped intuitively, but require time and careful study. The unsanitary conditions threatening the soldier's life are to be fought by the medical department while the line gives its attention to the human enemy. Departmental work, too, is obtained only by practical experience. Requisitions, vouchers, returns of various kinds must be filled and it is essential to the good work of

the department that this be done in a routine manner.

The ease and success of an experienced army surgeon in conducting the duties of his department is not from his preliminary college teaching, or the knowledge he gained in his early hospital life or general practice, but by traveling the same road all others have gone to become military surgeons.

The young practitioner who leaves his alma mater laden with knowledge theoretical and practical, feeling well able to cope with disease in its many forms, soon learns that to hold a successful position in life he must take, as a post graduate course, instruction in tact and the ability to handle people. As his view widens plainer and more distinctly does he see that he must study the people as well as disease. So it is with the military surgeon during his novitiate. He may have been a medal man at college, had a varied hospital and post graduate experience—indeed he may be an expert in medicine and surgery, yet he has to get by experience—and experience means time—a certain knowledge essential to his becoming an efficient military surgeon. He has got to study and become familiar with military life. This will, of course, vary with the men. Some have an aptitude for a military life as others have an aptitude for the treatment of eye, ear, nose, throat or other organs, and these advance rapidly in this special calling. I have seen others who, while most successful in practice, brilliant diagnosticians, learned in therapeutics and skillful in surgery were helpless under the multitude of unlooked for duties of the military surgeon.

Volunteer surgeons are required in the emergency of war when the regular establishment is supplemented by levies greatly increasing both line and staff. The contract surgeon is an isolated being more especially in demand in time of peace and as a temporary aid to the regular establishment. During this war the term "contract" surgeon was a misnomer; he should have been rated as a volunteer, and as such had his uniform, rank, pay and pension.

Let the "contract surgeon" remain as it is intended he should be—a civil practitioner under contract to perform certain temporary duty; to give his professional knowledge in exchange for pay during time of peace when special danger is not prevalent. Then educate the surgeon of the National Guard in the practical requirements of a military life that he may serve as a reserve to the Medical Department of the United States Army during

the emergency of war, when he will be asked to go into the field to take upon himself the duties and dangers of the surgeon of the regular army and is then more properly entitled to its uniform, its emoluments, and its pension—the volunteer surgeon.

You speak of the "regular soldier" (meaning the enlisted man) seeking the service of the contract surgeon in preference to that of the regular surgeon. This is only one of the peculiarities of human nature—the civil practitioner is constantly annoyed by his patients running off to quacks or following the advice of some friend whom they imagine has an overstock of wisdom from experience. The surgeons of the army and navy are bright, learned men; men who are constantly studying to improve their position and knowledge; men not excelled in their profession, and men who hold a most difficult and trying position. The contract surgeon was sought at times as herein stated because to the patient he was an unknown quantity. The soldier knew all about his own surgeon—by report from his "bunkie" if not from his own knowledge—but he felt the new comer might have had a much wider experience. But as a rule "it didn't wash," and he went back to his regular surgeon better satisfied.

The contract surgeons that I had personal knowledge of during the Spanish war were not the best men of the profession. Where they came from or how they got there I do not know, but take an instance in point: I had under my medical care from Santiago to Montauk three companies of soldiers, nearly or all ill, something like eighty-nine helpless with the fever. When they were turned over to me they were under the charge of a contract surgeon—all their regimental surgeons had died—who had their case two or three days between the general hospital and the ship. He had given them absolutely no attention. They did not even know they had a surgeon with them. He put in an appearance during the transfer and when I called his attention to the fact that three of the men were dying he looked dazed, went away, as I supposed for medicines, and I haven't seen him to this day.

The true way to prevent lowering the medical profession is to view these matters in an honest light. If this bill to aid the contract surgeon emanates from the Medical Department of the Army, well and good—there is some good reason for it. If not, it would be well to go slow and know exactly what is being done.

M. S. SIMPSON, M. D.

Plainfield, N. J.

SPECIAL THERAPEUTICS.

THERAPEUTIC INDICATIONS IN CERTAIN DISEASED CON- DITIONS.

BY MILTON P. CREEL, M. D., CENTRAL
CITY, KY.

*Surgeon I. C. Railway, Secretary Muhlenberg
County Board of Health, President
Muhlenberg County Medical
Society, etc.*

IN his great work on the diagnosis of disease, DaCosta takes occasion to define certain disease states. For instance, he says that instead of saying typhoid pneumonia, or typhoid dysentery, we should say that coexisting with the unfolding of the disease we have a typhoid condition of the system. There is no practitioner who has done a large work and who has given serious study to the conditions which confront him at the bedside of the patient, who will fail to agree with Da Costa in this matter.

In this article it is my intention to call attention to certain disease conditions which are constantly met by practitioners, and which to control requires comprehension of the condition not only, but a just conception also of the best means at our disposal for treatment.

The first class of these patients will comprise those who have just recovered from acute disease. Patients who have been confined with pneumonia, typhoid fever, remittent fever, rheumatism, in fact any disease which by intense pain, high fever, by the incapacity of taking, digesting or assimilating food, have come to be pale, anemic, and have lost general systemic tone. These are very common cases, and in fact it is of almost every day occurrence to see these patients.

These patients are sufferers generally with dyspepsia, capricious appetite, insomnia and nervousness. These symptoms when studied are found to be referable to an atonic condition of the system due to an improper nourishment of the tissues.

This state is seen in those who have suffered from loss of blood, either by hemorrhage or by drain on the albuminoids of the system. In the course of Bright's disease it is manifest, and in a like manner in other chronic affections. Indigestion of a long continued character, and malassimilation due either to inadequate nourishment from any cause, will be followed by the establishment of a diseased condition, which will be attended with results of the character already referred to.

The treatment of these patients in a manner that will bring speedy and satisfactory results, is a matter of the first importance, not only for the reputation of the physician, but because every day of the continuance of this condition emphasizes all the untoward elements, and makes the attainment of ultimate results all the more difficult of accomplishment.

In carrying out the demands here, a great many physicians rely implicitly on iron. That a proper preparation of iron very often brings us results that are satisfactory is undeniable. It is, however, very true that we will fail many times with iron. Its administration will often be followed by the establishment of intense biliousness, and some cases, especially patients prone to constipation, will find it impossible to take the remedy.

Cod-liver oil is relied upon to rebuild the wasted tissues, and re-establish a

healthy systemic tone. But this agent, valuable as it may be in some cases, is not the one indicated here. In these cases, often the weakened state of the digestive organs will make the appropriation by the system of cod-liver oil a matter of impossibility. In the summer months, too, cod-liver oil is an impossible remedy. But cod-liver oil does not produce results which are desired in the conditions which I have defined.

The bitter tonics were formerly given to produce the desired results here, but they have now been discarded by the best therapeutists. Mere stimulation of the stomach is not what is desired in these cases, and this is all we can hope from bitter tonics.

I have lately come to rely implicitly on protonuclein. It is, in the true sense of the word, a tissue builder, and its action in restoring tone to the system is speedy. It stimulates the nutritive functions, and excites glandular secretions. In a word, I find it a most fitting and reliable remedy in these systemic states. I have employed it for several years in a large number of cases, with good results, and I have come to regard it as one of the certainties of therapeutics. I give below, in outline, the clinical histories of several cases taken at random from my notes, but they, I think, will serve to illustrate the treatment here advocated:

Mrs. A. I. L., æt. 42.—This woman had recently recovered from a prolonged attack of pleuro-pneumonia. She was fairly well nourished when seized, but so great had been her pain, and the fever and other conditions

were so depressing, that when I first saw her she was very much emaciated, nervous, had a capricious appetite, and she suffered more or less with indigestion after taking any kind of food. This patient had been given iron, and cod-liver oil, and several other remedies, but they failed to produce any satisfactory results, and she said she had now gone four weeks since being discharged for pneumonia, but she was not in any way improved. She was at once put on protonuclein, in doses of five grains, every four hours through the day and until she retired, and she was to take a dose the last thing before going to bed. On this treatment I noticed improvement at the end of the first week that was marked, and from that time on she took on flesh, had no indigestion, was in good spirits, and went on to entire recovery. She took protonuclein only three weeks.

Mrs. O. W. W., æt. 25.—This woman had given birth to a child six weeks before I saw her. She had post-partum hemorrhage, and was very weak and pale, and not able to walk. She had likewise taken the ordinary tonics, but they had failed to bring her good results. She was put on protonuclein in doses of five grains every four hours until bedtime. On this she showed improvement from the third day, and after the use of the agent for a month she was as strong as ever, and her color was one which indicated abundant healthy blood.

Mr. J. T., æt. 30.—This patient was thrown from his buggy and sustained a fracture of the tibia and fibula. He was an indifferently nourished man, and his bones did not unite readily. In fact when I was called he had gone six weeks and no sign of osseous union was manifest. He was becoming decidedly anemic. I thought the remedy here would be protonuclein. This turned out to be the remedy needed, for after taking it about three weeks he got a good color and his bones united. This is one of the most manifest proofs of the value of protonuclein I have ever seen.



OPINIONS OF OUR ESTEEMED CONTEMPORARIES.

[*Medical and Surgical Bulletin.*]

THE AMERICAN MEDICAL QUARTERLY is a new publication, the first number being issued in June. Its initial copy contains ninety-six pages of valuable reading matter, contributed by the leading members of the American medical profession. We notice among these, Mathews, Hare, Mann, Reed, Tait, Nancrede and Fox. A number of handsome illustrations enhance the value of the text.

Kept up to the standard of the first number, it will soon become a leader among American medical publications. The *Bulletin*, wishing to benefit its readers, has arranged for a club rate. All new subscribers can have the *Bulletin* and THE AMERICAN MEDICAL QUARTERLY one year for the price of one journal—three dollars' worth, for two dollars. Send us your name at once.

[*Chicago Clinic.*]

Among the recent arrivals in medical journalism is one called THE AMERICAN MEDICAL QUARTERLY, which bears the earmarks of editorial experience, though edited anonymously. The articles are of exceptional merit and all by well-known and prominent writers, e. g., Dr. J. M. Mathews, Dr. H. A. Hare, Dr. M. D. Mann, Dr. C. A. L. Reed, Dr. Lawson Tait, Dr. Wende, Dr. Nancrede, Dr. J. O. Roe, Dr. George H. Fox, and others. If the prestige of popular contributors amounts to anything, the QUARTERLY will be a howling success.

[*Albany Annals.*]

In June there appeared the initial number of THE AMERICAN MEDICAL QUARTERLY, a magazine of the medicine of to-day. As a frontispiece appears a photogravure of Dr. Joseph McDowell Mathews, president of the American Medical Association for 1899. The list of writers is certainly an excellent one, containing the names of Drs. Mathews, Hobart A. Hare, Matthew D. Mann, Charles A. L. Reed, William C. Krauss, Lawson Tait, Ernest Wende, Charles B. Nancrede, John O. Roe, George Henry Fox, Albert Vander Veer and Willis G. Macdonald. It is needless to remark that the papers by these well known

men are of a high standard and the QUARTERLY is to be congratulated on securing such a list of able collaborators.

We would particularly mention the article by Drs. Vander Veer and Macdonald, which is elaborately illustrated with colored plates. If this initial number is a fair sample of what is to follow, we can surely predict a bright future for this new quarterly.

[*Medical Herald.*]

THE AMERICAN MEDICAL QUARTERLY, an excellent magazine, under the editorship of Dr. Wm. Warren Potter, has made its appearance in New York.

[*New Orleans Medical and Surgical Journal.*]

THE AMERICAN MEDICAL QUARTERLY has made its appearance very attractively. The first number, for June, is made up of several short articles, and others more elaborate. The illustrations are unusually well done. The QUARTERLY is well edited, and it is a regret that the name of the editor does not appear.

[*Medical Review of Reviews.*]

THE AMERICAN MEDICAL QUARTERLY, the first number of which is before us, is a magazine of high character filled with original articles, many of which are illustrated, contributed by recognized experts in the various departments of medicine and surgery. Few medical journals equal the QUARTERLY in the value of the papers or in the general execution of the work.

Arrangements with the publishers enable us to make the following proposition:

Any physician who will remit us \$2 (the subscription price of the QUARTERLY) will receive for one year the *Medical Review of Reviews* and THE AMERICAN MEDICAL QUARTERLY. If any physician does not find each issue of the latter publication worth more than the cost of the yearly subscription, the publishers offer to refund the money.

This offer is made to our old subscribers who remit direct to this office or to new subscribers who remit through our authorized agents.

[*St. Louis Medical and Surgical Journal.*]

THE AMERICAN MEDICAL QUARTERLY is the latest candidate in the medical journalistic field. The number before us is a large imperial 8vo. of 96 pages, replete with high-grade original articles and a few pages of editorials. The initial number includes among its contributors some of the best known and most capable men in the medical profession of this country. There is no editor apparent, as all articles are signed. This detracts in no way from the value of the publication, which is published at the remarkably low price of \$2 per annum. As will be seen by reference to another part of the *Journal*, arrangements have been completed whereby our readers can obtain THE AMERICAN MEDICAL QUARTERLY and the *Journal* at the exceedingly low price of \$2 per annum in advance.

[*Maryland Medical Journal.*]

THE AMERICAN MEDICAL QUARTERLY. A Magazine of the Medicine of To-day. Vol. I, No. 1. New York. 1899.

This is a new publication which appears, as its name indicates, once in three months. Although there is no name on the editorial page, it is known that it is the journal which was announced some time ago to appear under the editorial management of Dr. William Warren Potter, of Buffalo. This number contains many good articles by men with names, such as Mathews, Hare, Mann, Read, Krauss, Tait, Wende, Nancrede, Rose and Fox. The size of the journal is convenient, its type clear and illustrations abundant. If it meets with the desired success it will probably be made a monthly.

[*The Chicago Clinic.*]

Any physician who will remit us \$2 will receive for one year the *Chicago Clinic* and THE AMERICAN MEDICAL QUARTERLY. If any physician does not find each issue of either publication worth more than the cost of the yearly subscription, the publishers offer to refund the money. The publishers of the latter claim that no medical periodical, in this country or Europe, excels it in the character and value of the matter it contains. Certainly no medical journal issued recently has approached the scientific and practical value of this new quarterly. The *Chicago Clinic* will stand also purely on its merits, either as an advertising medium or a practical medical journal.

[*Medical Mirror.*]

THE AMERICAN MEDICAL QUARTERLY has presented itself to the medical profession in a most attractive form, and it is almost amazing to see the mass of meaty matter therein. It, as was previously announced to be the publisher's intention, contains elaborate studied, carefully-prepared papers by the masters in the profession, some of them too long to be read before the various medical societies of the country, where condensation and brevity are the prevailing features. *The American Journal of Medical Sciences* was for many years the one journal in America representing the heavier and more bookish features of our medical literature, and when it ceased to be published as a quarterly and became a monthly, losing dignity and weight just to that degree, entering into competition with the hundreds of monthlies already in the field, deserting a realm where it stood alone, it was generally believed that a mistake had been made, and a serious vacancy produced; but since the appearance of the first copy of THE AMERICAN MEDICAL QUARTERLY, which is, figuratively speaking, a mine of science, one can but realize that the place is occupied, a manifest need is met, and the knowledge that THE QUARTERLY is edited by the scholarly, lucid, terse writer who has so long conducted *The Buffalo Medical Journal*, Dr. William Warren Potter, gives us reason to know that the high standard established will be maintained.

Dr. Potter, the profession and medical journalism are all to be congratulated that THE AMERICAN MEDICAL QUARTERLY is an accomplished fact.

[*Texas Clinic.*]

THE AMERICAN MEDICAL QUARTERLY is a new publication, the first number, dated June, 1899, with publication office at 100 William street, New York City.

[*Medical Herald.*]

Any physician who will remit us \$2.50 will receive for one year *The Medical Herald*, \$2 (with premium), and THE AMERICAN MEDICAL QUARTERLY, edited by Dr. Wm. Warren Potter (\$2 per year). If any physician does not find each issue of the latter publication worth more than the cost of the yearly subscription, the publishers offer to refund the money. They claim that no medical periodical in this country or Europe excels it in the character and value of the matter it contains.

[*The Louisville Journal of Surgery and Medicine.*]

The most important acquisition to American medical literature acquired during the current year is THE AMERICAN MEDICAL QUARTERLY, the first number of which appeared on June 1st. This magazine will not compete with established weekly and monthly journals, but will endeavor to renew the interest of the profession in elaborate and carefully prepared papers which merit permanent preservation for reference and study. The editor announces that no attempt will be made for the publication of papers read under the ten-minute rule and hastily prepared reports of society proceedings; but that only papers of practical scientific value deliberately and carefully prepared will be given place in its columns.

The first number certainly establishes a standard of excellence which will merit and receive the commendation and support of the profession. The papers are from eminent members of the profession who have come to be regarded as established authority in the various branches of professional knowledge upon which they write. The entire makeup of the magazine demonstrates the experienced judgment and methodical work of an accomplished and experienced journalist. No one will wonder at this when learning by the circular of announcement that the editorial management of the journal will be conducted solely by Dr. William Warren Potter, of Buffalo, N. Y., who is widely known as an erudite and accomplished journalist. Dr. Potter has made the *Buffalo Medical Journal* an ideal monthly and periodical, and all familiar with his classical methods and finished journalistic work will anticipate an ideal quarterly magazine in the new enterprise which has been placed in his hands. It is announced that the owners and projectors of this magazine have abundant means to make of it such a publication as will reach the highest standard of similar publications in other departments of literature. We shall confidently look forward to the realization of this announcement, and congratulate the profession that such a useful field of journalism is to be so ably cultivated by this periodical.

The contents consist altogether of papers, book reviews, and similar contributions. The editor's name does not appear in the journal, and there will be no editorial articles except such brief announcements as may be necessary. The papers will be upon scientific topics and contributed by practical writers.

We congratulate the distinguished editor upon the appearance of the initial number, and welcome the QUARTERLY to our table.

[*St. Louis Clinique.*]

THE AMERICAN MEDICAL QUARTERLY, published at No. 100 William street, New York, is a new candidate for professional favor. The initial number was issued in June, and is highly creditable to the publishers. Its purpose is to publish articles of "scientific and practical value" and of such character that they will be preserved. We hope the new journal will be successful.

[*Denver Medical Times.*]

This is a new high-grade periodical, published by the company of the same name at 100 William street, New York. The first number contains important original articles by Mathews, Hare, D. D. Mann, Charles A. L. Reed, Wm. C. Krauss, Lawson Tait, Ernest Wende, Charles B. Nancrede, John O. Roe, Geo. Henry Fox, Albert Vander Veer and Willis G. Macdonald. The price of the quarterly is \$2 per annum, but for three months it may be had for \$1 a year in conjunction with any other medical journal which is paid for at the same time.

[*Southern Medical Journal.*]

THE AMERICAN MEDICAL QUARTERLY, price \$2 per annum, is one of the best medical journals published; and the publishers offer to refund the subscription price if each issue is not found to be worth more than the cost of the yearly subscription. To any physician who will remit us \$2, the price of THE MEDICAL QUARTERLY alone, we will send the *Southern Medical Journal* and the above mentioned journal, both one year.

ABSTRACTS.

MEDICINE FOR THE PHILIPPINES.

An idea of what the Army Medical Department is doing in the Philippines may be gathered from a recent requisition received by the Surgeon-General's office and filled. There were 540 items in the requisition, and among them were the following: 10,000,000 quinine tablets; 7,500,000 grains of quinine in bulk; 20 tons of epsom salts; 5,000 bottles of paregoric; 3,000 bottles of iodoform; 8,000 bottles of collodion; 5,000 bottles of chloroform; 2,500 tins of ether; 10,000 quarts of whiskey, and 7,000 quarts of alcohol. There were also 600,000 compound cathartic pills; 1,000,000 tablets of strychnine; 1,600,000 tablets of salicylate of soda; 12,000 yards of mustard plasters; 3,000 yards of adhesive plaster; 50,000 yards of plain gauze; 5,000 yards of unbleached muslin; 50,000 sterilized bandages; 96,000 roller bandages, 4,000 pounds of absorbent cotton; and 5,000 pieces of each kind of crockery and cutlery necessary to equip hospital mess tables.

DISEASES LESS DANGEROUS TO LIFE.

Dr. Samuel W. Abbott, Secretary of the Massachusetts Board of Health, has presented statistics to show that diseases are growing less dangerous to human life. The hygienic condition of the people in that State was better last year than at any previous time for a half century. There were fewer deaths by 1,263 from infectious diseases than during the previous year, though the population in the meantime increased from about 2,610,000 to about 2,665,000. The number of deaths from diphtheria decreased one-half, scarlet fever more than one-half, the deaths from consumption were about five per cent. fewer, and there were only about one-half as many deaths from measles as in the former year. The death-rate was reduced to eighteen per thousand, whereas it has been at nineteen for half a century. There was a slight increase in the number of deaths from certain diseases, including typhoid fever, pertussis, and cholera infantum. The decrease in the death-rate is attributed to various causes, as improved sanitation, stricter quarantine regulations, and a better knowledge of disease.

MASSAGE FOR UNCONTROLLABLE VOMITING OF PREGNANCY.

Geoffroy (*Centralbl. f. Gyn.*, July 8, 1899) says that the uncontrollable vomiting of pregnancy is caused by reflex contraction of the intestinal tract. This action is localized in various parts of the small intestine, but especially in the ileocolic angle of the colon. Painful contractions at this point are pathognomonic of reflex hyperesthesia of the alimentary canal, the symptoms of which are either cardiac pain, or temporary or continuous vomiting. Light massage judiciously applied to the colonic flexure will relieve these symptoms, according to the experience of the author in several cases.

ILLEGITIMACY IN THE BRITISH WEST INDIES.

The report of the registrar-general for the island of Jamaica, for the year 1898, deplors the falling off in marriages among the poorer classes, the rate per 1,000 population having undergone a steady annual decrease from 5.5 per 1,000 in 1891 to 3.7 in 1898. This is a discouraging indication of the social conditions on the island, but is consistent with the high and increasing rate of illegitimacy, since of the 28,447 births no less than 17,729—or 62.3 per cent.—occurred out of wedlock. In 1897 the proportion of illegitimacy was 61.1 per cent., this figure being much above the average for the preceding decade. The proportion of deaths of legitimate and illegitimate children under one year old to each 100 births of same was 13.87 for the former and 20.08 for the latter. The report compares the illegitimacy in Jamaica with that of the other British West Indian colonies, using the latest statistics, showing the rate of illegitimate births per 100 births as follows: British Guiana, 72.6; Dominica, 69.5; Antigua, 68.5; Jamaica, 62.3; St. Lucia, 59.38; Trinidad, 58.1; St. Vincent, 56.4; Grenada, 49.63; British Honduras, 36.73; Bermuda, 13.2. In Jamaica the blacks outnumber the whites in the proportion of 44 to 1, and are said to be largely relapsing into the semi-barbarous state prevailing among the blacks of San Domingo and Haiti. The low amount of illegitimacy in Bermuda corresponds with the unusually small proportion of venereal disease noted among the British troops on that station.—*New York Medical Journal*.

THE NEW METHOD OF ADMINISTERING CREOSOTE.

In the treatment of consumption and other wasting diseases, to maintain the nutrition of the tissue cells and thus keep their resisting power at the highest pitch is the one important factor.

The carbohydrates, being a cheap and efficient form of food, make up almost four-fifths of man's every day diet in our climate, and therefore to ensure that the starchy foods are properly digested and assimilated is to largely bring about that most desirable desideratum, the up-building of the patient. Compared to this strengthening and revitalizing of the tissue cells by making sure that they receive the proper amount of nourishment, every other form of medication sinks into insignificance.

Maltine is a reliable preparation of diastase which is strong in digestive power and can rapidly convert the insoluble elements of the food into soluble forms, so that they are absorbed, and thus the integrity and enrichment of the blood is assured.

It is also well known that phosphorus is a very important part of protoplasm, being always found closely associated with the vital principle, wherever manifested, both in the vegetable and the animal cell. Recent investi-

gations confirm the old empiric idea that phosphorus plays an essential part in the development and growth of living cells and that it has a real power to strengthen and stimulate the vital functions.

Maltine, being prepared from wheat, oats and barley, is especially rich in phosphates, and the contained phosphorus in this malt preparation is in a stable and permanent form. More than this Maltine increases the appetite and has proved itself to be an admirable vehicle for and adjuvant to many other useful drugs.

Creosote has won its way into therapeutics by real merit. By results it has proven itself to be a most efficient remedy in the treatment of phthisis, and it is the one drug now relied upon to combat the ravages of this disease. Creosote and its congeners—the members of the guaiacol group—possess decided antiseptic and antitoxemic action, and prevent or minimize those fermentative processes which contribute so largely to failure of the digestive processes in every chronic wasting disease. Whatever may be the real secret of its modus operandi, one fact is prominent, that creosote increases the appetite and the digestive power, and subserves the well being and the up-building of the patient.

A combination of Maltine and Creosote can hardly fail to be an efficient and reliable remedy; one especially adapted to the treatment of chronic nervous and wasting diseases; and this combination will add one more to the valuable preparations of Maltine.—*Journal of Medicine and Science*, July, 1899.

In calling attention to the Chicago Medical Book Co., and its advertisement on another page of this issue, we refer to an establishment well known for fair and honest dealings, one you will do well to patronize.

INFANT FEEDING.—A CLINICAL REPORT FOR THE "AM. GYN. AND OBST. JOURNAL."

No problem connected with the practise of medicine has received more thought from the scientific physicians of our country, during the past twenty years, than that of infant feeding. The publication of mortality statistics showing an enormous death-rate between the age of two years made the study into the cause one of very great importance.

During the past fifteen years I have prescribed enough of all the leading infant foods to become quite familiar with their real value.

About a year ago my attention was called to the claimed superiority of the "Allenburys" Series of Foods, and I at once began an investigation, which proved so interesting that I have prescribed these foods for a number of infants, with most satisfactory results. To meet the growing demands of infant life, it is incumbent upon the one who has the direction of its feeding to change the food from time to time, and if this matter is given careful attention we will be rewarded by seeing robust and vigorous children.

I append the following analyses showing

the close relation between the "Allenburys" Milk Foods and human milk:

	Cow's Milk.	Human Milk.	The "Allenburys" No. 1 Food.	The "Allenburys" No. 2 Food.
Water	87.4	87.6	83.67	83.65
Fat	3.6	3.8	3.33	3.06
Casein albumen.....	3.5	2.2	2.12	1.81
Lactose	4.8	6.2	10.20	10.86
Mineral Waters.....	.7	.2	.67	.62
	100.	100.	100.	100.

For many years it has been my custom to keep complete case-notes of the patients coming under my care, and I herewith append my record of the first three infants for whom I prescribed the system mentioned:

Case I.—Girl; born August 20, 1898. On August 21 I prescribed "Allenburys" Milk Food No. 1 for her. This being the first patient for whom I had prescribed this food, I gave careful instructions about details, so that I could secure a correct report. This child was seen by me every day for the first week of feeding, and I daily noted its weight and strength, which showed as rapid growth as others fed on human milk. On November 30 "Allenburys" Food No. 2 was prescribed, as such splendid growth had resulted from the No. 1 food I was anxious to observe the physiological action of the second stage of this system. My weekly observations of the growth and development of this child was continued until February 1, 1899, and I never recorded a more satisfactory condition; it was healthy, robust, and vigorous.

Case II.—Boy; deprived of mother's milk at the age of two months. August 22, 1898, prescribed "Allenburys" Milk Food No. 1, which was continually used for two months. His growth was above normal during this period, and on November 1 I had him advanced to food No. 2. His health was always good; no indigestion; no colic, nor any of the usual baby ailments. At the beginning of the seventh month I prescribed the Malted Food, which is known as "Allenburys" No. 3, and my record shows a continuous normal physical growth—a child with perfect health.

Case III.—Girl baby brought to my office at the age of two months. Examinations showed a little, frail, emaciated body, feeble vitality, and the nurse reported that it was very colicky and restless. She also reported that it had been fed on carefully sterilised cow's milk, and from its physical condition I diagnosed it as simply a case of inadequate feeding. I prescribed the same foods as reported in the former cases, with the happy result that this child showed progress with the first day's feeding. It is now six months old, and it has never been my good fortune to see a more robust or healthy child.

Other children who have received these foods have been likewise benefited, and it is within bounds to predict that we will henceforth have more success from the use of artificial foods for the feeding of infants. Further—and this is important—home modification and sterilisation of foods are less necessary, as the "Allenburys" Foods seems to be as perfect as science can devise.

A STRIKING CONFIRMATION OF DR. LAUDER BRUNTON'S THESIS.

"Phenälgin is an ammoniated, synthetic, coal-tar product. It differs from most of the analgesics in that it exerts a stimulating effect on the heart. In doses of ten grains and upwards a sedative effect is produced, in addition to its unquestionable analgesic actions on the sensory apparatus of the nervous system. These various actions are precisely those which a consideration of the chemical constitution of phenälgin would lead one to expect, and this is a striking confirmation of the truth of the thesis promulgated some years since by Dr. Lauder Brunton in respect of the inter-dependence of chemical constitution and physiological action. The stimulating effect of the ammonia constituent is first perceived, and this is soon followed by a soothing sensation due to the gradual subsidence of the painful manifestations. Phenälgin appears to be an ideal agent for the relief of insomnia associated with neuralgic or rheumatic distress. Similarly, in dysmenorrhea, not dependent upon obvious organic lesions, phenälgin procures prompt disappearance of the pelvic misery. Like most drugs belonging to this series, it is possessed of antipyretic properties, and, as already stated, it has hypnotic as well as anodyne properties, which enable it, in certain cases, to take the place of opiates, the use of which is attended by such marked gastro-intestinal disturbance."—The Medical Press, London, England.

ANALYTICAL REPORTS IN EDINBURGH "MEDICAL JOURNAL," ON PHENALGIN.

"One of the latest examples of synthetic analgesics has appeared in the substance termed phenälgin. Like many others, it also acts as an antipyretic and a hypnotic, but differs from most, in being a vascular stimulant, as well as in possessing antiperiodic properties. The chief cause of phenälgin exerting a stimulant effect upon the heart and circulation is to be found in the fact that it is an ammoniated compound. It forms a white powder, with an odor of ammonia, and is administered in the form of tablets or in powder. It is claimed that it contains ammonia in a nascent form, which is liberated on entry into the stomach, and hence acts as a stimulant. Chemically, it is an amido-benzine or ammonio-phenylacetamide. From the published reports of the effects following its administration, it appears to possess no toxic properties, to act vigorously in the various directions noted above, as well as in many other allied ways. If future experience corroborates the early high estimates of its properties, phenälgin will approach very closely to the ideal synthetic analgesic, antipyretic, hypnotic, antimalarial, etc., longed for by pharmacologists."

FOR THE THROAT.

The most elegant and efficacious medium for medicating the throat ever offered to phy-

sicians is the "Allenburys" Throat Pastille, which for many years has enjoyed the highest favor of the medical profession in England and Europe. These pastilles dissolve so slowly that the medicament is applied for a long time to the mucous membrane of the throat instead of finding its way quickly to the stomach as in the case of the ordinary lozenge. They are made by the old and reputable house of Allen & Hanburys, London, who have lately established a branch at 82 Warren street, New York. A sample box containing six kinds and a list of 26 different formulæ will be sent free on application.

PROTECTION FOR BABIES.

Unclean nursing bottles kill thousands of babies every year. "The Best" Nurser can be thoroughly cleansed, and with so little trouble that there is no excuse for not keeping it clean. An air-inlet in the lower end admits air as fast as the food is drawn out, thus preventing the nipple collapsing, and, consequently, wind-colic. This is certainly a scientific, ingenious and safe bottle and is deserving of favor.

POWDER CAPSULES.

Our readers will observe several pages of space devoted to a description of the products of the Messrs. Wyeth & Bro.'s laboratories. Especially notable is their "Powder-Capsules," "Solution Peptonate of Iron and Manganese" and "Granular Effervescent Salts," etc. All of these are the most recent additions to their list of advanced and approved remedies. Our purpose here, however, is to refer to their "Powder-Capsules," which present features of much novelty, but, at the same time, of great practical value. These Capsules, with their contents, represent the nearest approach which has yet been made to presenting drugs and medicinal agents in their original state of freshness and purity. The substances used are not manipulated with hand or subject to process of preparation of any kind except that of being reduced to the state of powder or fineness necessary to enclose them in the capsule covering. This fact of itself, apart from the pharmaceutical elegance shown, is deserving of the highest appreciation.

MENTAL SUGGESTION.

Every physician is well aware of the potent influence for good or ill, says the *Medical Record*, that the mind exerts over the body in sickness. In health, too, the effect of mental suggestion is with many persons powerful to an extraordinary degree. Upon this notorious psychological fact the Christian Scientists and

faith curers of all kinds base their treatment, and in virtue of some indisputable cures brought about by these means have been so long able to gull the public into the belief that their healing powers are effective in any case of disease or injury. Patent medicines and quacks owe their success to precisely identical reasons. If an individual has faith in a medicine or in a treatment, he will assuredly derive more benefit from that medicine or treatment than if he were skeptical as to its merits. There can be little doubt that the sympathetic physician is the one best calculated to lead his patient to recovery. Again in many diseases the good that may be wrought to the sufferer by the agency of mental suggestion is undeniable. Professor J. M. Baldwin, referring to this fact in connection with insomnia, says: "In experimenting upon the possibility of suggesting sleep to another, I have found certain strong reactive influences upon my own mental condition. Such an effort which involves the picturing of another as asleep is a strong auto-suggestion of sleep, taking effect in my own case in about five minutes if the conditions be kept constant. The more clearly the patient's sleep is pictured the stronger becomes the subjective feeling of drowsiness. An unfailing cure for insomnia, speaking for myself, is the persistent effort to put some one else asleep by hard thinking of the end in view, with a continued gentle movement, such as stroking the other with the hand."

Dr. E. C. Spitzka, of New York, has recently given some really remarkable instances of the power of mental suggestion. He cites the well-known fact that the mortality from wounds and diseases in a defeated army, compared with a victorious army, is as 4 to 3, and even 3 to 2. He also refers to the incontrovertible fact that persons in robust health have been known to die apparently of starvation after being without food for from three to five days. Dr. Spitzka is of the opinion that these individuals did not die of actual starvation, but from the physical effects of hunger. The proof of this contention lies in the fact that persons have been known to fast of their own free will for more than forty days without injuring their constitutions to any appreciable extent. Many examples establishing the truth of this statement might be given, but it will be sufficient to quote one from Dr. Spitzka's paper. He says: "In the graver forms of hysteria, when loss of sensation occurs in exactly one-half of the body, you can lay a piece of tinted paper on the sensitive side; then suggesting it to be a mustard-plaster, a red area will appear on the corresponding unsensitive side. Blisters of such a character that scars have permanently remained from them, have been produced in similar cases by the same method." The medical profession, it appears more than likely, have not as yet wholly appreciated the advantages to be derived from the employment of mental suggestion.



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EXPERIENCES IN INTESTINAL SURGERY.

(Concluded from p. 155.)

BY MATTHEW D. MANN, A.M., M.D., BUFFALO, N. Y.

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CASE VIII.—*Ectopic Gestation. Retention of the Fetus for Thirteen Years. Putrefaction of the Fetus. Openings into Small and Large Intestine and Bladder. Double Resection. Recovery.*¹

This case was referred to me by the late Dr. Bartlett, on October 22, 1891. The patient at that time reported that she had become pregnant thirteen years before, and that the child had died at the eight month. She had suffered no inconvenience from the dead fetus, but had had three children and two miscarriages during the time she was carrying it. A few weeks before I saw her, she had noticed particles of food coming from the bladder, and, later, feces. She was suffering intense pain at the time of the operation.

On opening the abdomen, coils of intestine were found adherent to a sac upon the left side of the uterus. After

separating the intestines and removing the sac, which contained a putrid fetus, two large openings were found, one into the small intestine and the other into the large; also an opening into the bladder. The intestines were so much injured that it was thought best to resect. Dr. Roswell Park resected one intestine, while I did the other, thus saving at least twenty minutes of time. The hole in the bladder was closed, and the abdomen thoroughly cleansed and drained with a glass tube. End-to-end anastomosis was made, with silk suture. The patient recovered after a somewhat tedious convalescence.

From the point of view of intestinal surgery, this case is an exceedingly interesting one, though that is not, perhaps, its most remarkable feature. It was hardly possible to close the openings in the intestine, especially in the small intestine, without danger of making stricture, as the loss of tissue and the destruction of the peritoneal

¹ For full details of this case, see *Buffalo Med. Jour.*, August, 1895.

surface around the openings were very great. While resection lengthened the operation and therefore increased the shock, the result showed that it was a wise decision, as the patient has never had any trouble from the intestines in any way since.

CASE IX. — *Abortion; Intestine Pulled into the Uterus During Curetting. Celiotomy; Resection of the Small Intestine; Attachment of Small Intestine to Large by Murphy Button. Recovery.*

Mrs. P., aged 31, was brought to the General Hospital on February 8, 1895. Her physician stated that while curetting for an incompleated abortion, an hour before, he had perforated the uterus and pulled down an end of intestine.

At the operation, I found the small intestine separated from the large at the ileocecal valve. The head of the cecum was much torn and frayed, and the small intestine was separated from its mesentery for, fully six inches. This separated end of small intestine was removed; the frayed portion of the large intestine, including the ileocecal valve, was turned in, and the healthy peritoneum brought together. An opening was then made in the intestine at another place, and the small intestine attached by the Murphy button. After the hole in the uterus had been closed, and the abdomen thoroughly irrigated and cleaned, the abdomen was sewed up. The patient made a prompt recovery. As I have already commented freely on this case, the reader is referred to the previous report for further details.¹

CASE X. — *Celiotomy Injury of Intestine. Resection. Recovery.*

Mrs. W., admitted to the General

Hospital June 20, 1896. She had a large ovarian tumor, which was exceedingly adherent, especially to the intestine. The tumor had grown between the folds of the mesentery of the small intestine, so that the gut was spread out over the upper part of the tumor. In separating the sac, it was found impossible to avoid injuring the intestine, so dense were the adhesions.

After careful consideration, it was thought best to resect two inches of the small intestine, and bring it together by the end-to-end anastomosis. Although the operation was long and the shock great, the patient eventually recovered.

CASE XI. — *Malignant Stricture of the Rectum. Resection; Murphy Button. Recovery.*

Mrs. P., operated on at the General Hospital on June 6, 1896. Before the operation she suffered from obstinate constipation, which seemed to be due to trouble in the rectum. It was impossible to reach any stricture by the finger in the anus; but by the vagina, behind the uterus, could be felt a movable mass, which was thought to be a tumor pressing upon the rectum. No attempt was made to pass a rectal bougie.

On doing celiotomy, the tumor was found to be a thickening of the walls of the rectum, just about at its juncture with the sigmoid flexure. Three inches of the intestine, including the growth, were resected, and the ends brought together with the Murphy button. The peritoneum was sewed over the button with fine silk. The button came away upon the thirteenth day. No attempt was made to remove it, but it was allowed to come away naturally. The bowels moved a number of times before the button was passed. The patient had no more

¹American Jour. of Obstet., May, 1895.

than the usual amount of pain after the laparotomy and suffered very little from shock or other disturbance. Her recovery was uneventful. An examination of the portion removed showed epithelioma.

CASE XII.—*Obstruction of Bowels from Inflammatory Contraction. Resection. Recovery.*

Mrs. S., referred to me by Dr. Chas. G. Stockton, was operated on in my private hospital on December 5, 1897. She stated that she had had great difficulty in getting the bowels moved for some time. She suffered greatly from intestinal tormina. At times the intestine would be distended and violent peristaltic motion would show itself. This was accompanied by great pain, and would gradually pass away. She was afraid of eating, as food seemed to cause the gas and pain, and she was slowly starving to death. The bowels moved occasionally without difficulty, and gas passed at times. The diagnosis was stricture, probably in the small intestine.

On opening the abdomen, I found the small intestine twisted on itself, and the outer surfaces firmly adherent in such a way as to almost completely occlude the lumen. About three inches of intestine were resected. After removal, the portion of the intestine holding the stricture was placed upon a faucet, and under great water pressure it was found to be slightly pervious. Careful examination failed to show any new growth.

CASE XIII.—*Inflammatory Stricture of the Rectum. Resection; Murphy Button. Recovery.*

Just one year from the date of this first operation this patient returned, complaining of exactly the same symptoms. This time, however, the obstruction was almost complete. At

the time of the first operation, I had discovered inflammatory trouble in the tube and ovary upon the left side, deep in the pelvis. I had wished to remove them then, but the patient was greatly exhausted, and I did not deem it best to prolong the operation. My diagnosis at her second coming was inflammatory obstruction of the lower bowel, similar to the first, but having a starting-point in the diseased tube. This proved to be correct. After separating the tube and ovary, I found a condition similar to the one previously operated upon, only, of course, there was no twisting. The constricted portion was resected, and the ends brought together with the Murphy button, exactly as in Case XI. The button came away about the eleventh day, and convalescence was complete. Since the second operation, the patient has gained in flesh, and a recent report shows that she is in perfect health.

CASE XIV.—*Cancer of the Rectum. Resection; Murphy Button. Death.*

Mrs. B., was operated on November 21, 1899. She was 59 years of age and in apparently good health. She complained of great difficulty in getting a movement of the bowels; and on examination a stricture was found, which could just be reached with the examining finger. Bimanual palpation showed a mass behind the uterus, half as large as one's fist. The diagnosis was cancer of the rectum. The patient was eager for relief, so I decided upon resection.

When the abdomen was opened I found a mass adherent to the posterior wall of the pelvis. It was easily loosened, and, in the Trendelenburg position, was cut away both above and below. About four inches of intestine were re-

sected. It was found impossible to thoroughly wash out the intestine, and in cutting the lower end it was necessary to go below the peritoneum of Douglas's pouch, thus opening up the entire layer of loose connective tissue around the rectum. Some fluid from the rectum unavoidably escaped into the pelvis and into this loose connective tissue. No difficulty was found in pulling up the rectum and in placing a Murphy button. The same was done above, and then, with the hand of an assistant in the rectum, to steady the lower button, the two halves were pushed together. A glass drainage-tube was placed from above after washing out the pelvis thoroughly with salt solution. The patient did well for four days, and then developed acute peritonitis, from which she died upon the fifth day.

CASE XV.—*Obstruction of the Bowels; Intestinal Adhesions. Celiotomy. Recovery.*

Mrs. N., was examined in August, 1897. She had been complaining for two weeks with all the evidences of gradually increasing obstruction of the bowels. After cathartics and injections, she could occasionally get a slight movement, but was greatly troubled with violent peristaltic motion and accumulations of gas.

A celiotomy done August 9 showed the small intestine bound down by many adhesions to the floor of the pelvis. The right tube and ovary were removed. It was impossible to find the left tube and ovary, though the tube was doubtless the starting-point of the trouble. With much difficulty the adhesions were broken up and the obstruction relieved. The intestines were greatly distended with gas, and were aspirated before being replaced. Although the prognosis was

very bad, the patient did well and went home; but a few weeks afterward she began to complain of the symptoms again. She was operated on soon after, by another surgeon, and newly formed adhesions broken up. This resulted in a permanent cure.

CASE XVI.—*Fecal Fistula Following Previous Celiotomy. Resection of Small Intestine. Recovery.*

Miss H., was admitted to the General Hospital in June, 1897. She was found to be suffering from a fecal fistula which had followed a previous operation. From the character of the material passed, the opening was evidently in the small intestine. Several attempts had been made, in another hospital, to close the opening, by plastic operation; but all had failed.

I, therefore, opened the abdomen and separated the adherent intestine. The coils in the pelvis were firmly adherent to each other, and were separated, with great difficulty. The portion of intestine having the fistulous opening was finally brought out of the abdomen and resected. Maunsell's method was used, and was found easy.

Later an abscess formed near the point of incision, which opened through the wound. It was then found that there had previously been a sinus at this point opening just alongside of the fistula, which had led down to a silk suture buried at the original operation. Two efforts were made, one by myself and one by Dr. C. C. Frederick, to remove this silk, but the adhesions were so numerous as to make it impossible. When last heard from, the patient was still suffering from the sinus, but had had no further trouble with the intestines.

CASE XVII.—*Cancer of the Sigmoid. Resection; Murphy Button. Death.*

Mr. H., aged 50. Suffered from severe hemorrhages of the bowel for some time. Although the patient was very fleshy, a nodule could be felt within the abdomen just over the brim of the pelvis, on the left side. The diagnosis was malignant disease of the sigmoid.

April 2, 1896, the portion of the intestine containing the growth was resected, and the ends united with the Murphy button. There was no difficulty in this, except from the amount of fat surrounding the intestine and the enlargement of the appendices epiploicæ. After the button was in place, a row of stitches was placed around the intestine to bring the surfaces closely together.

The patient rallied from the operation well, but some twelve hours afterwards had a severe rectal hemorrhage, from which he gradually sank and died about twenty-four hours after the operation. He was quite conscious at the time of the hemorrhage, and insisted that the blood came from a point further up in the intestine than the point of resection. He had complained of pain at this point for some time; and it is altogether probable that there was another malignant growth at this point. I was not aware of the subjective symptoms before the operation, and made no exploration of the upper part of the intestine. It hardly seems possible that the hemorrhage could have come from the resected portion of the gut; all the vessels were carefully tied separately; no vessels of any size were between the ends of the button, and had there been, the pressure of the spring in the button would have been sufficient to have stopped the hemorrhage. No post-mortem was obtainable, but from the symptoms it is fair to presume that the

hemorrhage came from a secondary growth.

CASE XVIII.—*Pus-Tubes; Severe Adhesions. Resection of the Small Intestine. Death.*

Miss W., aged 23, a patient of Dr. Burt Johnson. July 27, 1898, this patient was admitted to the hospital with all the evidences of severe pelvic inflammation. On opening the abdomen I found both tubes filled with pus. The whole of the lower part of the pelvis was filled with dense adhesions, which involved the small intestine. The intestines were loosened with great difficulty, and the tubes and ovaries dug out from their bed and removed. As the intestine was seriously injured in separating the adhesions it was thought best to remove a portion of it. About three inches were resected, and the ends brought together in the usual manner. The patient, who was in very poor condition to begin with, did not rally from the shock, but died in forty-eight hours.

CASE XIX.—*Cancer of the Small Intestine. Obstruction. Lateral Anastomosis. Recovery.*

Mr. McG., patient of Dr. Gregory, of Dansville. Was operated upon April 13, 1898. He had all the evidences of intestinal obstruction, the symptoms, however, having come on very gradually. He was greatly emaciated, and the distended portions of intestine could be distinctly made out through the abdominal wall. On opening the abdomen, the intestines were found covered with small nodules, apparently carcinomatous in character. These varied in size from that of a small shot to a horse-chestnut. One growth, which seemed to be the initial lesion, had completely contracted the lumen of a portion of the small intestine. It was not thought advisable to resect,

as the intestine was so universally diseased. A lateral anastomosis was, therefore, made, the intestine being twisted upon itself, as shown by the diagram, Fig. 1, in such a way as to have the current from the upper por-

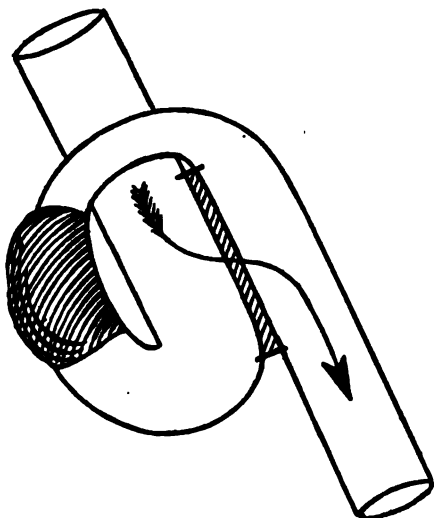


FIG. 1. Lateral Anastomosis.

tion continued into the lower in its natural direction without being deflected at an acute angle. The patient made prompt recovery, and was able to return to his business. The further history of the case is unknown.

CASE XX.—Salpingitis; Adhesions. Removal of the Tubes and Ovaries. Obstruction of the Bowels Following. Second Operation on the Twelfth Day; Artificial Anus. Death.

Mrs. M., patient of Dr. H. Miller, Lancaster, N. Y. On February 7, 1898, I opened the abdomen and found the sigmoid flexure greatly thickened and adherent to the back wall of the uterus and the broad ligament. The tube and ovary were bound down between the intestine and the broad ligament. The adhesions were broken up with great difficulty, and the tube and ovary removed.

On February 19, the patient pre-

sented all the symptoms of obstruction of the bowels. An incision was made in the left iliac fossa, upon the supposition that the obstruction was in the sigmoid. The large intestine was found empty, the small intestine was drawn up, and an artificial anus made. This was opened upon the table, as the patient was very weak. She did not rally from the operation, and died upon the second day.

CASE XXI.—Obstruction of the Bowels; Cancer of the Left Ovary. Artificial Anus. Death in Forty-Eight Hours.

Mrs. K., patient of Dr. Brown of Nunda, N. Y. The patient presented the usual symptoms of gradually increasing obstruction of the bowels. On opening the abdomen, a cancerous growth was found in the left ovary. The small intestine was firmly adherent to it. It was not thought best to attempt its removal, so a loop of small intestine was brought into the median line and firmly sewed there. The intestine was opened in forty-eight hours. The patient up to that time had done exceedingly well. A few hours after the opening she was suddenly taken with violent pain in the abdomen, and died in five minutes. No autopsy was obtainable, and the cause of death is uncertain.

CASE XXII.—Injury to Intestine During Operation. Resection of Five Inches. Death.

Mrs. G., admitted to the General Hospital April 10, 1899, with the diagnosis of chronic salpingitis, with adhesions. Abdomen opened, and both tubes and ovaries were found firmly adherent to the small intestine, deep in the pelvis. They were removed with a great deal of difficulty, the patient being in the Trendelenburg position. Notwithstanding every care, the intes-

tine was badly torn. It was found necessary to resect about five inches of it. The usual end-to-end anastomosis was done. After all the hemorrhage had been stopped the wound was closed in the usual manner. The patient gradually sank and died thirty-six hours after the operation.

CASE XXIII.—*Pus-Tubes; Extensive Adhesions. Unpremeditated Resection. Recovery.*

Miss W. was operated upon at the General Hospital in June, 1895. Both tubes were found filled with pus, and the adhesions in the pelvis were as numerous and as severe as any I ever saw. After working for an hour I managed to get out the tubes and ovaries, and gathered up what I supposed was the broad ligament and tube and ovary with a tangle of adhesions. After tying and cutting I found that I had removed several inches of the sigmoid flexure, both ends of which were enclosed in the ligature. I, therefore, removed the ligature, tied the vessels separately, and, after much search, secured the ends of the intestine and brought them together as well as I could. There was not enough peritoneum to cover them satisfactorily, so I sewed together the muscular tissue and in part only the mucous membranes. The ends were deep in the pelvis, and the operation was exceedingly difficult. I did not suppose that the patient could possibly recover. The abdomen was carefully washed out, and a glass drainage-tube used. Notwithstanding the great length of the operation, which was nearly two hours, the patient did not suffer severely from the shock. She rallied quickly, and made an uninterrupted recovery, except that a fecal fistula existed for a time, which finally closed spontaneously.

CASE XXIV.—*Obstruction Following the Removal of a Fibroid. Second Operation. Recovery.*

The notes of this case are lost. The patient was referred to me by the late Dr. Clark, of Niagara Falls, N. Y. She had a large tumor, which was successfully removed. Four weeks after the operation she presented the evidences of obstruction. The abdomen was reopened and two knuckles of small intestine were found adherent to the abdominal wound. One of them was evidently the seat of the obstruction, as the intestine above it was very much dilated. The adhesions were broken, the intestine restored to its normal condition, and prompt recovery ensued.

CASE XXV.—*Obstruction of the Bowels; Cancer. Artificial Anus. Death.*

Mr. B. of Albion, N. Y., patient of Dr. Sutton. Was operated on at his home, September 30, 1897. All the evidences of gradual obstruction of the bowel were present. At the time of operation the obstruction was nearly complete. An exploratory incision revealed a large malignant growth which could not be removed. A portion of the small intestine was attached to the median wound, and opened forty-eight hours afterward. Very little feces passed through the opening, and the patient gradually sank, and died in a few days.

In addition to the cases here given, I find in my book the records of many cases where the intestines were more or less injured in breaking up adhesions. In some instances the peritoneal and muscular coats were torn down to the mucosa; in others, the intestine was torn all the way through. In one instance, three openings were

found in the large intestine, and one in the small. These were carefully closed, and the patient recovered.

I have not considered it necessary to resect for small or longitudinal tears in the portion opposite the mesentery. When occurring near the mesentery and in the long axis of the gut their closure is apt to shut off the blood-supply from a portion of the intestine, and to lead to necrosis. In these cases I have resected, as well as in others where the intestine was very badly injured. Most of the cases of simple tear have recovered; and where the result was fatal it has usually been from the severity of the primary operation, as shown by the unavoidable injury of the intestine, and could not be directly attributable to the injury and operation on the gut. These cases were, from the nature of things, nearly all severe, and I have not been able to see that the added shock and slight increase in the length of the operation were sufficient to be important factors in the result. I have usually drained in these cases, and have only once seen any signs of infection from the intestine.

In a few instances intestinal fistulæ have developed as the result of injuries, generally following the track of a drainage-tube. In every instance, so far as observed, where the patient has recovered, the fistula has closed. The prognosis in case of a fistula depends upon the portion of the intestine in which the opening exists. Usually they are in the large intestine, deep in the pelvis; and in such cases the chances of cure are good; but where the opening occurs in the small intestine, as in Cases I., II., III. and XVI., there is no tendency to spontaneous closure. In such cases a reopening of the abdomen, with closure of the

hole in the gut or resection, is usually necessary, and, as shown here, the results are generally good.

Table of Cases.

	No.	Deaths.
Operations on Intestine.....	29	9
Primary Operations	23	6
Secondary to Other Operations	6	3

Character of Operations.

	No.	Deaths.
Lumbar Colotomy	1	0
Artificial Anus, Small Intestine	4	2
Lateral Anastomosis	3	1
Resection, Circular Enterorhaphy,, Small Intestine....	10	3
Resection, End-to-End, Murphy Button	4	2
Resection, End-to-Side, Murphy Button	1	0
Cross Section and Obliteration of Ends.....	3	0
For Obstruction of Bowels...	9	4
For Closure of Fecal Fistula..	2	0
For Closure of Fecal Fistula, Resection	3	0

An analysis of the results attending these operations may be of some benefit in helping us to draw conclusions.

Of the 24 patients operated on, 9 died. As several of the patients were operated on more than once, each operation should be counted. This will make a total of 29 separate operations, and reduces the mortality-rate accordingly. The principal cause of death has been shock or exhaustion, owing both to the bad condition of the patient and the length and severity of the operation. But one patient died of peritonitis.

As might be expected, the operations for obstruction of the bowels give the greatest mortality (9, with 4 deaths). Of resections of the intestine, there were 15, with 5 deaths. The

results have been very much modified by the conditions under which the operations were done. Where the operation has been done primarily for intestinal trouble, the results (23, with 6 deaths) have been much better than where the intestine has been operated on for injuries done in the course of other operations (6, with 3 deaths).

Of the 6 primary cases which died, one (Case II.) was thoroughly exhausted by a long existing fistula in the upper part of the small intestine. Three (XIV., XVII., XXV.) suffered from cancer; and 3 had complete obstruction (XX., XXI., XXV.).

Unquestionably the fatality in severe secondary operations (6, with 3 deaths) was greatly increased by the fact that the intestinal operation was added to the shock of previous and always severe procedures. The deaths in these cases need not be attributed to the interference with the intestine, but to the great length and shock of the doubled operation.

The closure of fecal fistulæ whether by resection (3), by sewing up the hole after opening the abdomen (1), or without opening the abdomen (1), seems to give good results, though the number of cases is too small to draw any very definite conclusions. All these cases recovered.

In doing end-to-end anastomosis I have tried several methods. I have been best satisfied, however, with circular enterorrhaphy with a silk suture. Lembert's stitch has been used—a continuous suture interrupted after each four or five stitches, the loop used for tying being cut off and the suture continued with the same thread as long as it lasted. This seems to be the most rapid method, and is preferable, it seems to me, to the mattress suture, which takes up so much time. In each

instance a double row of sutures has been placed, and in this method a resection has been accomplished in fifteen minutes.

The Maunsell method was used but once, and was very satisfactory, being quickly accomplished and easy of performance. Where one end of the intestine is not too greatly dilated this method seems to be especially useful in resection for obstruction. When the dilatation is too great, so as to make the difference between the two intestines very marked, it is impossible to bring the ends together without too much puckering. In several instances I was obliged to sew up a small portion of the lumen of the gut before attaching the small end. In one case (XII.) I had the opportunity of examining the gut where this had been done a year after the operation. No constriction was found, the point of suture being recognized with great difficulty. I have never employed the rubber cylinder, though I keep one ready for use.

In regard to the Murphy button, I have not used it at all in joining small intestine to small intestine; but once in joining small to large, with satisfactory result; and three times in joining the sigmoid to the rectum. The use of this device in intestinal surgery would seem to be quite limited. I feel, however, that in resection of the rectum it may prove to serve a useful purpose. To make an end-to-end anastomosis with the Lembert stitch, deep down in the pelvis, even in the Trendelenburg posture, is exceedingly difficult. The placing of the Murphy button is very much simpler; and the two cases first related would seem to show that where the obstruction of the diseased portion is above the peritoneal investiture, the operation may be successfully done. I feel confident that

the future will show that even where the disease is situated very low in the rectum, it can be extirpated and the ends brought together properly and successfully in this way.

Senn, in describing a case of this kind¹, states that resection in this locality is impossible, and for the same anatomical reasons a lateral anastomosis cannot be made. He, therefore, did a colotomy.

These three cases (XII., XIII., XIV.) seem to show that Senn's estimate of the difficulties of doing a resection in the pelvis is too high. The Trendelenburg position has made a great change in operating deep in the pelvis. With the patient in this position, all of the other intestines are entirely out of the way, and the field, with a moderately long incision and retractors in place, is perfectly clear and open. I would urge the trying of this procedure, as I think in the hands of skilled abdominal surgeons it promises as much as any operation now before us for stricture or cancer of the rectum.

When used, the dangers from the button can certainly be reduced by bringing the peritoneum together with a few stitches on each side of the button. A continuous suture of catgut can be placed without consuming much time.

As suture material, I have used fine, white silk, in a straight, round needle. The needle should be short, and not too fine. For sewing up superficial tears or injuries where the mucosa is not injured, I have used fine catgut, but have been afraid to trust it in resections. This is almost the only situation in which I still use silk, having abandoned it for catgut in nearly all other operations.

¹ Intestinal Surgery, p. 41.

In a number of cases I have first brought the mucosa together with a fine continuous catgut suture. This has many advantages; it stops hemorrhage from the cut end; it holds the intestine together while the peritoneum is being sewed and aids a nice adjustment.

Much trouble is often experienced in cases of obstruction by the distention of the intestine by gas. I have never hesitated to aspirate with a fine needle, putting it in at an angle to the long axis of the intestine. I have found the quickest way to empty the bowel is to have a very large bottle exhausted of air before the operation begins and attached to the aspirating needle. It is surprising how quickly an overdistended gut can be emptied in this way, and where minutes count this is of importance. In the case of great distension by fluid contents, when necessary, I have opened the gut by a longitudinal incision and emptied it.

The importance of washing out the stomach in cases of obstruction before operating cannot be too strongly urged. I have seen a man literally drowned by a regurgitation of fluid forced up from a full stomach by the pressure, as a surgeon was replacing the intestine after eventration.

The making of an artificial anus I have always considered as an opprobrium to surgery, and not to be undertaken except to save life and as a last resort, or in cases of obstruction from malignant disease where a radical operation seems impossible or hopeless. The disgusting, pitiable plight of a patient after such an operation is enough to repel any surgeon from doing it. In certain cases of obstruction of the bowels from non-malignant causes, it may be done with the great probability that ultimately the open-

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Fig. 1. Baby B. Case II.

ing can be closed and the bowel returned to its natural function, as in Cases I. and III.

I might have added to this list of cases a considerable number operated

on for appendicitis; but, as this seems a subject by itself, a distinct branch of intestinal surgery, I prefer to leave them for a future report.

37 Allen Street.

A CLINICAL CONTRIBUTION TO THE KNOWLEDGE OF INTUSSUSCEPTION OF THE BOWEL IN CHILDREN, WITH THREE ILLUSTRATIONS.

BY EDWARD J. ILL, M.D.,

Newark, N. J.

OPERATION for intussusception of the bowel in small children is rare enough to justify a report of the following cases:

CASE I. Baby J., four months old, was taken sick Jan. 12th, 1897, with very acute colicky pains lasting at intervals until Jan. 17th, and accompanied by straining efforts and the passage of bloody mucus in large quantity. Small, if any, fecal masses were passed. On Jan. 17th it began to vomit, and now both the physician and the parents began to suspect serious trouble.

On the evening of the seventh day I saw the child very much in collapse, with the invaginated tumor just within the anus. Posture raised the mass above the reach of the finger and made it palpable in the left iliac region.

It was therefore determined to open the abdomen and make attempts at reduction. The abdomen was opened below the navel, and it was soon seen that the whole of the large intestine had been invaginated, so that the presenting part at the anus was the caecum coli, or, rather the ileocecal valve. All attempts at reduction failed, as the adhesions had become inseparable and the tissue so friable that the least handling broke it. The child died in about twelve hours.

CASE II. Baby B., male, seven months

and twenty-three days. Intussusception of five inches of the small bowel of three days' standing. Celiotomy. Recovery.

On May 15th, 1897, I was asked to see Baby B., male, seven months and twenty-three days old, by the kindness of Dr. H. A. Henriques. The child had a slight attack of diarrhea three days previously, when it was suddenly taken with severe crying, and nothing more passed its bowel. Dr. H. was called and soon diagnosed the cause of the illness. He expressed himself as to the doubtful value of an operation, in which I agreed with him.

On my arrival I found a well-fed child but much prostrated, with feeble pulse, pale skin and but slight rise of temperature. There was a distinct tumor in the lower abdomen, a little to the left of the navel, of sausage-shaped character. There was some tympanitis and frequent vomiting. No tenesmus was noted, but bloody rectal discharges were present. Although the case had gone on for three days, it was deemed wise to give the child a chance by abdominal section; the ordinary means, such as high enemas and posture, having as usual resulted in no benefit.

Everything was prepared for a quick operation, it being apparent that a slow operation would kill the baby. The anesthetic, given with skill, was not prolonged beyond the absolutely necessary period. The

operation had to be done by lamp-light. An incision from the navel down to the pubes rapidly carried one into the abdomen. It is rather astonishing how little space there is between these two anatomical landmarks in small children. The intussuscepted small intestine was readily found, but could not be brought up into the wound and was carefully manipulated with both index fingers until the intussusception was relieved. A rapid through-and-through suture, care being taken to take a large bit of muscle and fascia, closed the very small wound. Fortunately, there was but slight collection of fluid in the abdomen and no peritonitis. The adhesion between the intussuscepted layers of the bowel were very slight. Although the operation did not last longer than twenty minutes the child was much prostrated and looked more dead than alive. Its head was kept lower than its feet for twelve hours, and it soon recovered from its severe illness, its bowels moving on the next day, and its recovery was uninterrupted.

Through the kindness of Dr. Henriques I am able to show a photograph of the child two years later, a fine little fellow in excellent health.

CASE III. Baby Robert J. M., male, aged six months. Intussusception of four inches of the ilium into the caput coli, drawing the latter into itself about one and one-half inch. Thirty hours' standing. Celiotomy. Recovery.

On April 20th, 1898, I saw, through the kindness of Dr. W. H. Lawrence of Summit, N. J., a six-months-old child with the following report: It had suddenly been taken with paroxysmal attacks of pain, between which it was drowsy and showed symptoms of head trouble. Previous to this it had always been well. An injection given at once brought away bloody mucus only. This led the doctor to make the diagnosis of intussusception. After thirty hours of trial by air and water enemas without result, it was decided to give surgery a trial.

The writer found a child decidedly prostrated, vomiting, with frequent attempts at straining, and a weak, quick pulse. Its great pallor was very marked. Since the beginning of the illness it had frequent mucous discharges from the bowel, strongly tinged with blood. An indistinct mass was felt through a very tympanitic abdomen in

the right iliac fossa. Dr. L. very carefully gave the anesthetic, and a nurse, as assistant, were all who were present at the operation. The incision was carried as in the first case from the navel to the pubes. Again the exceedingly small space was very annoying, and the incision was carried half an inch above the navel. The intussusception was found in the right iliac fossa. Four inches of ilium had slipped into the caput coli, drawing an inch and a half of the caput coli with it. Much difficulty was experienced in relieving the entangled mass as it was severely pinched by the ileocecal valve. Once during a straining spell the whole of the bowels, as it seemed, prolapsed, and gave no little anxiety and some difficulty before we were able to reduce them. The wound was closed in the same fashion as in Case 2, and the child made a nice recovery. Through the kindness of Dr. Lawrence I am able to show a photograph of the very bright baby when eighteen months old, a year after the operation.

CASE IV. G., male, six years old. Intussusception of four or five inches of the transverse colon into the descending colon of four days' standing. Celiotomy. Recovery.

On November 3d, 1899, I saw with Dr. H. A. Henriques of Morristown, N. J., at All Souls' Hospital, a little fellow of six years with the symptoms of obstruction of the bowel and vomiting. He had been sick several days, but there was no history of sudden attack. A tumor was located above and to the left of the umbilicus. His previous history was that he was always well except slight attacks of stomachache. There had been some mucous discharge, but no blood. The obstruction did not seem complete, as there was gas in the rectum, and there was some vague report that gas had passed from his bowel. I could get no history of tenesmus. He had a slight rise of temperature and but a slightly accelerated pulse. His general appearance was so good that some hesitancy was expressed as to the advisability of an operation. The discovery of the elongated tumor decided in favor of such measures.

An incision midway between the ensiform cartilage and navel soon brought to view an intussusception of about four or five inches of transverse colon into the descending colon. It was carefully reduced by



Fig. 2 Robert J. M. Case III.

a milking process, there being very few adhesions between the two surfaces though the invaginated bowel but its mesentery were very much swollen and the peritoneum had lost its luster. The abdomen was closed the same way as described above; and this little fellow got well nicely. His first movement took place within forty-eight hours after the operation.

CASE V. Baby L., male, five and one-half months old. Intussusception of the whole large intestine into itself of fourteen hours' standing. Celiotomy. Recovery.

Through the kindness of Dr. W. H. Glatzmeyer I saw Baby L. on April 5th, 1899. The doctor first saw the child at 10 A.M., and immediately recognized the cause of the ailment. He reported that the child was suddenly taken ill at 2 A.M. with great uneasiness and pain, soon followed by severe prostration and vomiting. At the time of his first visit the prostration was very severe, and large quantities of bloody serum were passed by the anus. He discovered a tumor to the left of the navel. At 4 P.M. the writer saw the child with Dr. G., and agreed in the diagnosis. The child was extremely pale, with a weak, thready pulse and cold skin. The prostration was so great that it remained indifferent to any pressure on the abdomen. There was a serious question whether so sick a child would stand an anesthetic and any operative interference, which, from the size of the tumor, must necessarily be a severe one.

A distinct elongated mass was felt to the left and above the navel, running in the direction towards the left iliac region. An incision above the navel three and one-half inches long, extending from the ensiform cartilage to the navel, soon showed a more severe condition than any one could have imagined. There had been a complete intussusception of the large intestine. The caput coli was found just at the sigmoid flexure. A great deal of careful manipulation was necessary to secure a reduction. All pressure was exerted behind the invaginated tumor and no attempt at pulling was made as it was plain that disaster must accompany such efforts. The mesentery was much swollen and here great difficulty was experienced in reduction. This is contrary to a preconceived opinion the writer had formed about severe cases of intussusception. During the at-

tempts the bowel ruptured twice down to the mucous membrane, and to a length of three-quarters of an inch. Immediate suture with fine silk closed the breach. The caput coli was almost black, and for a few moments it was thought wise to remove the appendix vermiformis so black was it, but it soon acquired a little color and was let alone. There was some fear that the bowel would again relapse into its former condition, and this urged me to fasten the bowel in three or four places, with fine silk, to the anterior abdominal wall. These sutures were all placed in the ascending colon. The operation lasted forty minutes, and it seemed as if the child could not stand the shock. It looked as if every breath was its last. There was no pulse at the wrist nor could any be counted within sixteen hours. Hypodermic injections of strychnia sulphate, grain $\frac{1}{100}$, were given every two hours for the next twenty-four hours, but could not be discontinued until two days later. Its rectal temperature steadily rose until twelve hours after the operation, when it had reached $104\frac{3}{4}^{\circ}$. From that time it steadily declined and became quite normal by the third day. The first flatus was expelled in four hours. The last bloody stool occurred twelve hours after the operation. It then had frequent diarrheal stools, as many as four or five a day. This continued for seven days.

It was fed by its mother two hours after the operation by expressing milk from the breast. By morning it was able to nurse for itself, and from that time was nursed at regular intervals. The accompanying photograph shows the child four weeks after the operation.

The clinical history of these cases is remarkable for its singular simplicity. A child, generally of good health, but now and then suffering with intestinal disturbances, colicky in character, is taken suddenly ill with violent pain, usually of intermittent character. Great prostration accompanies this condition, much greater than can be accounted for by a simple indigestion. The face shows great pallor and anxiety which is marked even in very small children. Tenesmus is not an infre-

quent symptom, especially when the intussusception is located low down in the large intestine. It is accompanied by discharges of bloody mucus, which in very acute and in severe cases may even be bloody serum or pure blood. We may expect more of this the acuter the intussusception and the lower in the intestinal canal the accident has occurred. In the cases of incomplete obstruction we would not expect much, if any, bloody discharge. The strangulation of the gut being incomplete, its circulation is little disturbed. At first there is no fever, but usually in twenty-four hours there is a gradual increase of temperature. The pulse, contrary to the report of many, has always been rapid in my cases, and showed by its quality the severeness of the injury. Tympanites, which in the early stages, is slight, gradually increases until, when peritonitis supervenes, it becomes excessive. We now have the general condition resulting from the ailment. The obstruction is not always complete, and this is, unfortunately, in the eye of the non-surgical practitioner, a good reason for non-operative interference. When the obstruction is not complete nor very acute the symptoms of prostration in regard to facies and pulse are not so marked. The completeness of the obstruction will depend much upon the acuteness of the invagination. Case 4, being that of a boy six years old and not accompanied by complete obstruction, is typical for that class of cases. These cases might be called subacute. The value and importance of palpating a tumor cannot be overestimated in making a diagnosis. The location of the tumor gives us some idea of the location of the intussusception but not of the size of the invagination. In Case 5 I should not have

dared to think of the extent of the invagination from the size of the tumor. The tumor was usually of an elongated shape, rather solid to the touch, and somewhat curved. An exception to this was Case 3, which simply formed an irregular bunch. The fixation of the tumor was quite marked in all except Case 4. This, of course, is due to a shortening of the mesentery, since the mesentery takes part in the invagination. The differentiation is chiefly from that for ordinary colic or a dysentery.

The causes of this difficulty are little understood. All my patients were males. Three had prepuces, two had been circumcised at the early age of eight days. I mention this, since the prepuce has often been called upon to answer to the charge of being the instigator of this deed as well as of others. I was able to learn in my cases that the children were all well with the exception of an occasional attack of colic.

TREATMENT.

From a perusal of the literature on intussusception in children it is learned that the result by medication and enemata are extremely unsatisfactory, and death is the common result. Until lately it was thought that operative interference was likewise exceedingly unsatisfactory. This old opinion must rapidly give way to the more advanced one that early, prompt, quick and clean surgery offers the best chances for success. Considering the difficulty I have experienced in reducing the invagination with the abdomen open I can no longer have any respect for the temporizing and useless efforts of posture and enemas. The operation should follow the diagnosis, and the diagnosis should be and can be made



Fig. 3. Baby A. Case V.

by the practitioner at an early hour. Every lost hour increases the risk to the child.

OPERATION.

If a tumor is felt the incision should be made in the median line nearest to the mass. In other words, if the tumor is above the navel the incision should be above the navel; if below the navel the incision should be there. The space between the navel and pubes is very short, and the incision may have to extend above that landmark. All manipulations should be made in the abdomen itself. It will rarely prove possible to remove the invaginated gut from the cavity of the abdomen. If possible the eyes should follow all movements, so that any injury to the bowel may be promptly repaired. My experience has taught me that the best manipulation is exercised by pressure from the apex of the invagination towards its base. I would advise close inspection of the reduced bowel and mesentery for several moments to observe if there be any tendency to relapse and possible injury during manipulation.

All manipulations should be made with the greatest gentleness. It is hardly necessary to add that there is no room for antiseptics in so tender an organ as the peritoneum of the child.

Therefore all antiseptics should most carefully be washed from the hands, and dry hands should be used for the operation.

The prognosis will depend upon six conditions:

1. The length of time elapsed after the accident before the operation. An operation on a dying patient is a discredit to surgery, and eleventh-hour operations are to be discouraged. (Case 1.)

2. The length of the operation. This will depend upon the celerity and properly directed efforts of the operator, as well as the severity of the case. Under this heading must be considered the very great risk of the anesthesia. The anesthetized patient should not wait for the operator. The operator should be ready, knife in hand, when the little patient is receiving the first whiff of the anesthetic.

3. Most careful asepsis.

4. Freedom from injuries to the bowel.

5. Extent of the invagination. The larger the invagination the more serious the operation.

6. The location of the intussusception must have some bearing on the prognosis. Thus it is very difficult to withdraw the ilium from its imprisoning iliocecal valve. (Case 3.)

1002 Broad Street.

TUBERCULOSIS OF THE EPIDIDY- MIS.

[*Occidental Medical Times.*]

Dr. Dudley Tait exhibited a specimen of tuberculosis of the epididymis at a recent meeting of the California Academy of Medicine. The specimen was a testicle which had been removed for the cause named. Dr. Tait stated that he did not think it right

that the Academy should adhere to the opinion, expressed at a previous meeting and published, that radical surgical methods alone should be employed in dealing with this condition. He thought that as the testical is a gland with internal secretions of value to the individual economy, it should be preserved when possible. The specimen showed that the epididymis alone was involved and the testicle itself might have been saved.

POST-OPERATIVE VENTRAL HERNIA.

BY ROBERT T. MORRIS, M.D.,

New York.

REPORTS from the Hospital for the Ruptured and Crippled in New York and the statements of instrument-makers concerning the vast number of trusses required for patients with post-operative ventral hernia, would seem to indicate that efficient methods for avoiding the complication of ventral hernia are not as yet sufficiently well known. Those of us who are engaged in surgical work have to care for many of these cases, and for patients who are unwilling to return to the first operator who is unaware of the ultimate results of his operative work. I have made it a rule to attempt to get these patients back to the first operator for two reasons. It is well to cultivate an *esprit de corps* in the profession for conserving the confidence of the people, and it is well for the operator to learn quickly that he is to change some details of his technique. It is not easy, however, to persuade hernia patients to return to the first operator because the laity have become rather conversant with the subject, and most of these patients tell about their conversations with other patients.

Inquiry into the causes for post-operative ventral hernia readily discovers that many of the abdominal operations have been performed by operators who had not as yet been quite well drilled in surgical principles, and one wonders how they managed the more complex problems of ab-

dominal work if the simplest part of the work shows defective technique. It is a simple matter with our present knowledge upon the subject to reduce the percentage of post-operative ventral hernia to a fraction of one per cent. in general abdominal work, and a recent contributor to the subject, who was commended for his honesty in confessing to ten per cent. of hernias, did a great deal of harm by unintentionally casting discredit upon the statistics of operators who had mastered the subject.

The commonest cause for post-operative ventral hernia seems to be due to improper suturing of the structures of the abdominal wall. There is no necessity for complicated and fanciful methods for closing the wound. One simply needs to leave structures as he found them. That is all sufficient. One cannot well leave structures as he found them unless each structure is accurately sutured separately, excepting the adipose layer. The peritoneum may be separately sutured to advantage with the finest strand of cat-gut and one which will be absorbed in about five days. This will avoid the vexatious little adhesions which stick the omentum or a loop of bowel to the abdominal wall at a point where larger sutures have caused plastic lymph exudation upon the parietal peritoneum. Patients who should be grateful to the surgeon for successfully performing a life-saving operation often become un-

grateful because of the persistent annoyance caused by these little parietal adhesions. The adhesions can be readily separated, to be sure, but that means another operation and the patient dreads it. There are only two muscle groups that can safely be sutured *en masse*. The rectus and pyramidalis in mid line operations, and the internal oblique and transversalis in lateral operations. Other muscles need to be separately sutured for the reason that they have unlike traction lines, and two muscles with unlike traction lines when approximated with one suture bearing, are prone to pull away from each other in such a way as to leave points of small resistance to a force from behind.

A separate suture is required for the fibrous fascia layer in mid line operations and for the external oblique aponeurosis in lateral operations for the reason that deeper structures cannot be left as they were found, by a suture which closes deep and superficial layers under one line of bearing. The adipose layer of the abdominal wall requires no suturing at all, no matter how thick it may be, for we can use the resource of atmospheric pressure upon that structure. Sutures extending through the adipose layer set fat free, and the free fat by hydrostatic pressure finds its way along the sutures and into spaces which should be occupied by plastic lymph only. The thicker the fat walls the better they become united by atmospheric pressure if we simply introduce a small subcuticular suture into the skin layer and press the cut adipose margins snugly together just before the skin suture is finally fastened. If one has occasion to reopen the abdominal wound for any reason two or three days after the adipose layer has been united under at-

mospheric pressure, he will have difficulty in separating the walls of the wound in the original line. The advantage of using the subcuticular suture is the avoidance of making stab cultures of staphylococcus albus with resulting abscesses which interfere with firm union of the deeper structures.

Another common cause for post-operative ventral hernia is due to leaving a large drainage opening after operation in septic cases. We know at the present time that this is almost always unnecessary, and that the use of gauze packing and large gauze drainage is worse than useless—far worse than useless. The use of gauze drainage in an open abdominal wound is now a crude resource that has been superseded for several years, but it is still in vogue, and many ventral hernias are the result. Our knowledge of the newer pathology and statistics of successful avoidance of gauze packing are accessible for all who are not too busy to make a study of that part of the subject. Last week in a case of pyosalpinx with progressive acute pelvic peritonitis I ruptured one pus-tube and scattered the pus over exposed peritoneum. The wound was closed without drainage, and the patient is recovering as nicely as these patients usually recover, without septic complications. Ten years ago I would not have dared to treat the case without drainage, but we now know more about hyperleucocytosis than we did ten years ago, and the hernias of open wounds are avoided.

Too early removal of sutures was a potent cause for ventral hernias in earlier days. Temporary sutures of silk or silkworm-gut or silver wire were removed at the end of a week or ten days by some operators. This

length of time is sufficient after blunt dissection operation, but not where muscles and aponeuroses are cut, excepting in short incisions.

In most of my appendicitis operations the wound is perfectly firm and safe at the end of eight days, but in these cases I not only use blunt dissection but also a short incision. There is little injury to trophic nerves and the process of connective-tissue replacement of plastic lymph completes the repair in about eight days. No further repair is necessary after lymph has become replaced by connective-tissue cells. The reparative process seems to vary in time in proportion to the length of the wound and the consequent injury to trophic nerve. Also with the extent of an infection in which bacteria liquefy lymph coagula which are undergoing replacement. My reports on experiments relating to this subject have been published elsewhere. In closed abdominal wounds, without infection, I usually allow the patient to get out of bed on the eighth day if the wound is less than two inches in length. If it is a longer wound the patient is kept in bed for seventeen or eighteen days. No abdominal supporter is used after the patient is out of bed. I am engaged in abdominal work and have the statistics of several hundred abdominal operations of my own, but I do not know the name of any maker of abdominal supporters, and would not know where to send a patient without making inquiry. The fraction of one per cent. of hernias that I have been able to trace in my own work have been treated in various ways. One patient who wears a truss had general suppurative peritonitis and the wound had to be kept widely open because the pus had a tendency to become encapsulat-

ed in widely separated collections. Another patient who wears a truss had an extra-uterine pregnancy with the placenta disposed over such a wide peritoneal surface that the oozing required gauze packing and an open wound. In three of my appendicitis cases long suppuration caused imperfect repair of the abdominal wound. In none of these cases would an abdominal supporter have helped matters.

It is not necessary to use any suture material excepting catgut for closing abdominal incisions. Different operators have different reasons for using other suture materials, but catgut is all sufficient and no other suture material is necessary so far as the point of need is concerned. Some of the other suture materials are very objectionable.

Buried silkworm-gut knots cause endless annoyance by coming out months or years after they have been introduced. The same is true of buried silver wire. Surgeons who use buried sutures of silkworm-gut or silver wire do not seem to know how frequently their patients apply to other surgeons for subsequent treatment. The main point that I would make, however, is that such buried sutures of durable material are unnecessary if used for the purpose of preventing post-operative ventral hernia.

Post-operative ventral hernia is readily curable, so far as my present experience goes, if one follows the simple plan of dissecting structures apart separately in such a way that they can be separately sutured. *En masse* suturing of the margins of a hernial opening is not a successful method, but the uniting of dissected structures in their normal anatomical position has been accomplished without difficulty, and there has been no return of the hernia in cases in which I have

employed that method. In one case where the hernial opening was large enough to admit the closed fist easily the skin was so thin and so firmly adherent to bowel loops that it could not be separated safely, so I simply cut around the outside of the dome of skin and pushed it together with the adherent bowel into the peritoneal cavity and then made accurate closure of the wound by separate suturing of

peritoneum, muscles, and fascia over the sunken mass. What has become of the skin I do not know. The patient made a good recovery and has no recurrence of the hernia. I have operated upon a number of post-operative ventral hernias much larger even than this one, but it was possible in the other cases to find a line of cleavage between skin and bowel.

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THE ANTENATAL FACTOR IN GYNECOLOGY.

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IT is now generally conceded that in the etiology of gynecological affections there are two factors of paramount importance, the *traumatic* and the *infective* or toxic; but there is also a third factor, the *antenatal*, and to this perhaps too little heed has been given. Evident traumatic and infecting causes have overshadowed less evident predisposing causes; etiological factors immediately preceding the resulting diseases have bulked more largely in the mind of the gynecologist than antenatal causes, which had their origin years before the uterus and ovaries awoke to functional life. Nevertheless it is necessary for the full understanding of gynecological problems that attention be paid to the antenatal factor.

TRAUMATISM AND INFECTION.

In cervical, vaginal, perineal, and vulvar lacerations every one recognizes the traumatic factor. Year by year such lacerations have diminished in frequency as the direct result of improvements in the construction of obstetric instruments and of the growth of correct opinions as to their use. There has been in the last decade a noteworthy decrease in the number of cases calling for operation for repair of vesico-vaginal fistulæ, and instances of grave laceration of the perineum are not so common.

The great importance of the rôle of the infective factor in gynecological etiology is now well established. Every text-book devoted to gynecol-

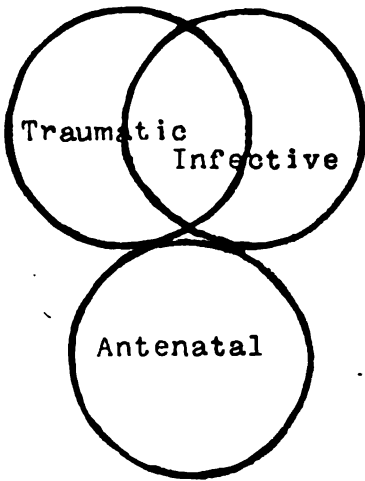
ogy and every medical journal teems with allusions to the part played by sepsis, gonorrhea, and tubercle in the production of inflammatory processes in the uterus, its annexa, and in the vagina, vulva, and pelvic cellular and peritoneal tissues. Uterine and annexial displacements, and hypertrophic, atrophic, and hemorrhagic changes in the generative organs must in many instances be ascribed to this cause, acting either alone or in conjunction with traumatism. In this group are included not only the morbid states due to the action of micro-organisms, such as streptococci and gonococci, but also those caused by parasites such as echinococci and pediculi. A great part of the work of the gynecologist of the present day consists in the making of attempts, sometimes by medicinal means alone but more often and more effectively by operative procedures, to undo the results of acute and chronic infective conditions of the genital organs. Most of the cases which he is constantly meeting can be traced in their origin either to immediate infection or to infection following after traumatism. Further, even in the cases in which operative interference is required for non-infective states, such as ovarian cystomata and uterine neoplasms, it is still infection, septic or otherwise, that the operator most dreads, and it is against infection that his best efforts are directed. Nevertheless, while all this is perfectly true, no gynecologist can be long in active practice without perceiving that traumatism, microbic and parasitic infection, and toxic influences do not serve to explain all the morbid conditions and all the phenomena connected with them, which he is very day encountering and having to treat.

Ere long he suspects the existence of another factor; this is the antenatal.

THE ANTENATAL FACTOR.

By the antenatal factor in gynecology, I mean more than the existence of gross malformations of the uterus and its annexa, with their effects upon the performance of the functions of reproductive life. These, of course, are included; but I mean also all those abnormalities in structure, predispositions toward certain diseased processes, and inherited functional peculiarities which there is good reason to believe are determined antenatally, and which have oftentimes so powerful an effect upon the progress of gynecological cases. The occurrence of such anomalies as atresia of the vagina, double uterus, and defective formation of the ovaries is well known to every gynecologist; every one is able fairly accurately to forecast what the probable result of this or that malformation will be. But there are other and more subtle ways in which conditions and tendencies, produced before the birth of the individual, project themselves into her later life; these are not so generally known, at least their far-reaching effects are not so fully appreciated. It may at once be admitted that it is not possible to arrange all the morbid states which affect the female generative organs under one or other of these three factors; an etiological classification of gynecological complaints is not so simple a matter. It is not practicable, for instance, to group together all the diseases of the uterus that are due to infection, and then all those that are due to traumatism, and then all those due to antenatal states in a linear series. It would be coming more nearly to the

truth if the three factors were represented by three circles, two of which (the traumatic and the infective) bisected one another, while the third (the antenatal) touched the circumferences of the first and second, thus:



I do not forget that other causal factors than the three just named have been recognized in gynecology; they act chiefly through the nervous system and consist in unhygienic methods of education, in delayed marriage, in prevented conception, and in irrational modes of dress. Tight lacing, however, might almost be placed among the traumatic causes; it is pressure which, if not dangerous at once, soon becomes so from its long continuance. These errors practised by one generation of women become the antenatal causes of defective development of the whole system, and especially of the reproductive organs, of the next generation. I also admit the evil effects of alcohol and other drugs upon the generative functions of women and their progeny, but such causes I group with the infective and toxic agencies. With these limitations and explanations I think it may be accepted as true that

most of the causes which lead to gynecological complaints are either traumatic or infective and toxic, or antenatal in their origin.

THE ANTENATAL FACTOR IN (A) THE MORBID ANATOMY OF GYNECOLOGY.

The antenatal factor is very evident in the morbid anatomy of gynecology. All the major malformations of the female generative organs and nearly all the minor ones are truly antenatal in origin. Trifling exceptions are found in the uterus pubescens, in atresia vulvæ superficialis arising from adhesive vulvitis in infancy, and in some hypertrophic conditions of the labia and clitoris. The various types of double uterus (didelphic, bicornate, ceptate), the uterus unicornis, the uterus rudimentarius, the uterus fetalis, the minor uterine malformations (incudiformis, parvicollis, etc.), and absence of the uterus; absence and atresia of the vagina, double vagina, unilateral vagina, and stenosis vaginæ; vulvar and hymeneal anomalies; absence and rudimentary development of the ovary, accessory ovaries, accessory tubal ostia, and diverticula, and rudimentary tubes; and the various forms of pseudo-hermaphroditism; these are some of the admittedly antenatal morbid states of the female genitals. The morbid anatomy of all these anomalies is set forth at greater or less length in all text-books on gynecology (I have myself written the article on this subject for Allbutt and Playfair's *System of Gynecology*, pp. 63 to 112, 1896), and need not be entered into here. It may, however, be noted in passing that all these anomalies are arrestments of normal embryological processes; they are the expression of the pathology of the genital organs during the stage of

their evolution or construction; they represent morbid embryogenesis; and, judging by what is known of the causation of malformations of other parts of the body in the human subject and among animals, it may be presumed that the disturbance of embryogenesis is brought about by the action of traumatism, microbes, or toxins upon the embryo in utero.

But antenatal diseases, as well as antenatal malformations of the female generative organs, are met with and leave their impress upon the later history of the individual in whom they occur. I have recorded several cases of fetal peritonitis, and in two of these there was displacement of the ovaries and Fallopian tubes of such a nature that, had the infants lived to the years of reproductive activity, they could hardly have escaped much suffering during menstruation and would probably have been sterile. Fetal pelvic peritonitis may also be instrumental in producing congenital or pathological retroflexion or antelexion of the uterus, with or without concomitant shortness of the vagina and conical cervix with pin-hole os; the far-reaching effects of these morbid conditions are well known to every gynecologist. Even prolapsus uteri with or without hypertrophic elongation of the cervix has been found so soon after birth as to prove that it existed potentially before birth. Two cases of this congenital form of prolapsus uteri were reported by J. Thomson and myself in 1897 (*American Jour. of Obstetrics*, XXXV., 161); these were the seventh and eighth known examples of the anomaly, and since then four or five further cases have been recorded; and it is a striking fact that in all of them uterine displacement coexisted with spina bifida in the lumbosacral region.

These occurrences suggest that perhaps some of the instances of prolapsus in the unmarried and in nulliparous married women may have an antenatal origin; and, bearing in mind the association of the prolapse with spina bifida, it will be well in future to examine cases of procidentia and descent of the uterus for spinal defects, and especially for spina bifida occulta.

Even the tumors which affect the female organs of generation may in some instances have an origin in antenatal life. This is especially true of the dermoid cysts or teratomata of the ovary. These growths are generally met in early reproductive life, even in some cases in childhood. Recent researches have revealed the existence of a long series of types of dermoid cysts, showing all the gradations from a growth containing only some hairs and skin, to one containing a rudimentary but perfectly recognizable embryo. Their origin may be explained by regarding them as the result of fetal inclusion or enclavement or of parthenogenetic and imperfect segmentation of ova in Graafian follicles; in any case the antenatal factor may be invoked. Further, many of the other neoplasms which render the operation of abdominal section so often necessary in modern gynecological practice, must be ascribed to the cystic degeneration of structures which existed in antenatal life and ought to have completely atrophied. I refer to parooophoronic and parovarian cystomata.

THE ANTENATAL FACTOR IN (B) THE SYMPTATOLOGY OF GYNECOLOGY.

It is true that the symptoms that call attention to the maladies of the female generative organs are usually separated by a long interval of time from an-

tenatal life, nevertheless they are not very rarely due to conditions developed before birth. The dysmenorrhea and sterility associated with congenital flexions of the uterus, and with defective developments of the Graafian follicles in the ovary from fetal pelvic peritonitis, may be justly ascribed to the antenatal factor. Similarly, dyspareunia and profuse hemorrhage during the first attempts at coitus are sometimes due to antenatal anomalies in structure or form of the hymen and external genitals. Amenorrhea, although most frequently due to physiological conditions, is yet sometimes caused by such antenatal states as rudimentary development of the uterus, tubes, or ovaries, vaginal atresia, or hymeneal imperforation. In cases of amenorrhea in the unmarried, therefore, the physical examination of the genitals ought not to be too long postponed; for one or other of these congenital states may exist, and if this be so medicinal treatment need be no longer carried out and time thus wasted. Irregularities in menstruation may also be due to malformations, especially of the uterus; thus, in the double uterus, menstruation may occur every fortnight, every month, or once in two months. Fortnightly menstruation may be explained by the occurrence of a discharge from both uterine cavities once a month, but there is no coincidence of dates, and therefore there is a fourteen-day interval. Menstruation once in two months, again, may be due to a flow from one-half of a double uterus at intervals of two months, the other half of the uterus being imperfectly developed or imperforate. It is possible that the anomalous form of dysmenorrhea known as the *mid-pain*, or *mittelschmerz*, may be occasionally caused

by uterine contractions in the imperforate half of a double uterus striving ineffectually to expel menstrual blood. Symptoms pointing apparently to disease of the nervous system may in certain cases be the result of congenital anomalies of the genital organs, such as adhesion of the clitoris, a condition resembling in many ways phimosis in the male. The history of the passage of feces from the vagina probably points, in the case of the multipara at any rate, to the existence of the antenatal anomaly known as vulvar anus. Bleeding from the bladder at intervals of a month has been known to be due to vaginal atresia and the existence of a congenital communication between the uterus and the bladder. Examples might be multiplied, but sufficient instances have been cited to prove that even in the symptomology of gynecology the antenatal factor must not be neglected.

THE ANTENATAL FACTOR IN (C) THE ETIOLOGY OF GYNECOLOGY.

I have already referred to the presence of an antenatal factor in the causation of the malformations of the uterus and the other organs of generation, of the so-called pathological flexions of the uterus and displacements of the ovaries and tubes, and of the ovarian dermoids and parovarian and paroophoronic cystomata; but there are yet other gynecological morbid states of which the cause must be looked for in the life that precedes birth. For instance, extra-uterine pregnancy has recently had two new theories advanced to explain its etiology, and both of these may be correctly described as antenatal. According to one, it is occasioned by the presence of an accessory tubal ostium abdom-

inale or of a tubal diverticulum, and cases have been reported¹ of ectopic gestation in which these malformations were found. According to the other theory, the power to form a decidua is normally confined to the mucous membrane of the body of the uterus, but under certain circumstances this power may be possessed also by the mucosa of the Fallopian tube, for both the tube and the uterus are derived from the duct of Muller; it may be that through an arrest of the development of the tubal mucous membrane it retains this decidual reaction. Even fibromyomata of the uterus have of late years come to be regarded as occasionally due in some measure to antenatal causes, and a very curious family history of the heredity of fibroids has been put on record by T. Spannochi (*Annali di ostetricia e ginecologia*, XXI., 331, 1899). There were three brothers called M., S. and P., and of these M. and S. married two sisters, A. and B. The descendants of M. and A. were free from abdominal tumors, but those of S. and B. showed in a very striking way the tendency to uterine fibroids and also to heart disease; there were nine children, of whom seven were females, and of the seven four had fibroids and two had also concomitant heart disease, while one of the three who had not fibroids had a daughter who developed a fibroid, and of the four daughters who suffered from fibroids one had three daughters, all of whom had fibroids and heart disease, and of these two were twins. The third brother, P., married E., a woman not related to A. and B.; there were five daughters and six sons from this marriage, in which it must be noted

that the mother had no fibroid herself; two of the daughters had fibroids, while a third suffered from heart disease and gave birth to three daughters, of whom one suffered from a fibroid; further, one of the sons married and begat a daughter, who had both a fibroid tumor of the uterus and a cyst of the ovary, and she in her turn gave birth to three daughters, one of whom had already been operated upon for a uterine fibro-myoma. In this remarkable family history not only does there seem to be an antenatal tendency to the production of female children with a predisposition to develop fibroids, but this tendency, curiously enough, seems to have been transmitted through the males in some instances. Of course, this antenatal transmitted tendency to produce fibroids, is not incompatible with the theory of origin of such tumors from the muscular coat of the small uterine arteries or from proliferating congenital germs. In this relation reference may also be made to the curious family histories in which all the female offspring either developed cancer or were twins; and this is but another suggestion that cancer or the tendency to its development is prenatally predisposed to. Deciduoma malignum has also a very anomalous relation to antenatal life, for it would seem to be the result of abnormal developments not in the antenatal life of the woman who suffers from it but in that of her progeny in utero.

THE ANTENATAL FACTOR IN (D) GYNECOLOGICAL DIAGNOSIS.

There is not, perhaps, much need for me to insist upon the necessity that exists for the gynecologist to keep in his mind, in forming a diagnosis, the pos-

¹Henrotin, F., and Herzog. *Rev. de gynec. et de chir. abdom.*, II., 633, 1898.

sible presence of antenatal malformations of the genital organs. At the same time many of these malformations are so rare that even an experienced gynecologist may not have had the chance of seeing more than perhaps one or two of them in a lifetime. Further, the medical periodicals contain not infrequent records of errors in diagnosis which have arisen through the want of a just recognition of the possibilities of the antenatal factor. Thus, the abdomen has been opened for the removal of a uterine or ovarian tumor to find a pregnancy in the rudimentary half of a uterus bicornis; fibroids of the uterus may be regarded as malformations of that organ, and more frequently malformations are mistaken for fibroids; and atresia of the vagina leading to hematometra has been diagnosed (through insufficient examination) as a normal pregnancy, and has led to unjust imputations upon the moral character of the girl who has been the subject of the vaginal anomaly. But, doubtless, the worst errors in diagnosis have been due to the non-recognition of male pseudo-hermaphrodites in early life. Through this mistake these individuals have been suffered to grow up wearing the dress and having the social position of females, and it has even happened to some of them to be married to men as women. The association of amenorrhea with the secondary sex characters of the male, in an individual apparently of the female sex, should always excite the suspicion of the gynecologist who may be consulted, and he ought to insist upon a physical examination of the patient. An interesting instance of this occurrence has recently been reported by Croom (*Trans. Edinb. Obst. Soc.*, XXIII., 102, 1899); it was

the case of two individuals who had been brought up as sisters, but who turned out on examination to be really hypospadiac brothers; fortunately, the mistake was discovered when the individuals were 19 and 21 years of age, respectively, and with the help of the lawyers new names were given to them and a new home and occupations were found for them in another part of the world. Manifestly, however, it would have been better for everyone concerned if the pseudo-hermaphroditism had been discovered at the time of birth. In this relation it may be well to keep in mind that congenital ovarian hernia sometimes occurs and may be mistaken for an undescended testicle.

THE ANTENATAL FACTOR IN (E) GYNECOLOGICAL PROGNOSIS.

The antenatal factor has occasionally intervened in somewhat curious fashion in gynecological prognosis. Thus a case¹ was reported not very long ago in which an operator engaged in curetting a uterus, thought that he felt the curette pass through the wall of the organ; in alarm he ceased his interference and awaited results with considerable fear, but no ill effects followed, and on a subsequent occasion he discovered that he had been dealing with a double uterus and that the curette had simply passed from one cavity of the viscus into the other, giving to the hand of the operator the sensation of perforation. The removal of the ovaries in order to induce a premature menopause in cases of uterine hemorrhage and in some kinds of nervous disease has not always been followed by the anticipat-

¹Blondel. *Ann. de gynec.*, Vol. L., 137, 1898.

ed results, and it has been suggested that sometimes the error in prognosis has been the outcome of the existence of an accessory ovary or of a constricted piece of an ovary. Finally, it must not be forgotten that in gynecology, as in other departments of medicine, antenatal conditions have seldom so hopeful a prognosis as have the maladies which are developed during postnatal life; instances of this are forthcoming in the congenital displacements of the uterus, and in malformations of that organ and of the ovaries.

THE ANTENATAL FACTOR IN (F) GYNECOLOGICAL THERAPEUTICS.

Considerable progress has been made in the rectification of the malformations of the genital organs which arise from antenatal causes. The operation for imperforate hymen may be described as perfected, and the treatment of atresia vulvæ superficialis may also be regarded as satisfactory. Further, recent improvements in the management of atresia vaginæ and of vulvar anus have been introduced, and it may be noted that the opening into the peritoneal cavity once so dreaded in the operation for the construction of an artificial vagina, is now rather the object aimed at than the contretemps avoided. At any rate it is found to be advantageous to open into the pouch of Douglas in order to determine at once the condition of the uterus and ovaries. Into the whole question of the modern operative treatment of atresia vaginæ I have entered at length elsewhere (*v. Scot. Med. and Surgical Journ.*, June, 1899). It must, however, be confessed that much still remains to be done in the reparative surgery of ante-

natal defects of the genital organs in women. Even in the management of the congenital flexions of the uterus and of the results of fetal peritonitis there is great room for improvement in present-day therapeutics. The management of pregnancy in the rudimentary horn of a bicornate uterus resolves itself into the management of ectopic gestation. The problem of the prevention of the malformations of the uterus and the other female organs of generation has scarcely yet been seriously investigated, for the sufficient reason that little has been known of the mode of origin of these anomalies. Of course it has been recognized that arrests in the normal process of development of the ducts of Muller and of the mesonephros and the anlage of the ovaries explain the nature of most of the malformations, but in the absence of information concerning the causes of the arrests this knowledge avails little. Some light has of recent years been thrown upon the whole question of the cause of malformations and monstrosities, more especially by the methods of experimental teratogenesis. The general outcome of these experiments has been to strengthen us in the belief that the same causes which, when acting upon the adult organism, produce diseases, are effective in leading to malformations when they come into play before birth, and especially in the embryonic epoch of antenatal life. It is, therefore, to be expected that it will yet be shown that microbes and their toxins and toxic agencies, such as alcohol and lead and other poisons, and possibly also traumatism, are the ultimate causes of malformations. It remains for future investigators to determine whether the anomalies of the generative organs, as well as of the

other systems of the body, are more common in the descendants of parents who have been alcoholic, syphilitic, tubercular, or otherwise affected or unhealthy. Certainly the most marked degree of malformation of the female genitals compatible with the postnatal life of the individual that I have ever seen, was in the person of a girl whose father died in an asylum and had been alcoholic, and whose mother was also a drunkard. In face of such probabilities in the etiology of malformations, it will soon become a burning question what steps should be taken by medical men, by governments, by individuals to put a stop to or at least to limit the procreation of manifestly abnormal offspring. My views on this matter are contained in a lecture given in the University of Edinburgh in the spring of this year (1899) and published in the *British Medical Journal* for April 15.

THE ANTENATAL FACTOR IN (G) GYNECOLOGICAL JURISPRUDENCE.

I have already referred to questions in medical jurisprudence in which the antenatal factor plays a part, *viz.*, the registration of the sex of pseudo-hermaphrodites; but there are several other questions besides those connected with individuals of doubtful sex which may come into the law courts and require an answer from the specialist in gynecology. I recollect, some years ago, when a certain *cause célèbre* was in every one's mouth, hearing a well-known gynecologist state at a medical meeting that he was prepared to affirm that a woman who had a split or lacerated cervix must have been pregnant at one time or another. His assertion was, of course,

challenged, and it was pointed out that a virgin or a nulliparous patient might have had her cervix artificially split in order to remove a fibroid tumor or intra-uterine polypus. But it might further have been stated that laceration of the cervix might be present in a new-born infant as a congenital condition. Yet this is true, for of late years Penrose (*American Journ. Med. Sc.*, n.s. CXI., 503, 1896), Jefferson (*Med. Sentinel*, IV., 552, 1896), and Edwards (*Keating's Cyclopædia of the Diseases of Children*, V., 899, 1899), have all met with undoubted cases of congenital split of the cervix uteri with erosion. The condition is probably an abnormality in the arrangement of the mucous membrane of the cervical canal, a congenital histological ectropion. In addition to its purely medico-legal importance it may also be that congenital laceration of the cervix has some bearing upon the later development of cervical erosions in women, and even upon the origin of cancer of the cervix uteri. One must take great care in the witness-box not to be too emphatic in stating what structural conditions may and what may not be compatible with chastity. As has already been shown in an earlier part of this communication, even prolapsus uteri, genuine and well marked, may be met with in the infant of a few hours old.

There is, then, a connection closer than might be expected between antenatal pathology and gynecology. There is a projection of the former into the latter, although many years may elapse before the results of the events which occur before birth are seen in the consulting-room of the gynecologist.

THE PROGNOSIS OF EDDYISM.

BY HENRY REED HOPKINS, M.D.

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A CULT of local origin having more than half a million of adherents, a large and rapidly increasing literature, hundreds of schools for propagating its beliefs and granting its privileges, which claims for itself the divine authority of a special revelation, and to be at once a complete system of theology and medicine merits, on the part of the medical profession, discriminating, if not sympathetic, study. For this purpose it does not concern us to inquire just how many copies of "Science and Health" are in circulation, or just how many congregations are now accustomed to meet for public worship according to the principles and requirements of Eddyism—or just how many healers are devoting their time to the cure of the sick, or the measure, comparative or absolute, of the success these healers are attaining.

The press, professional and secular, our courts and lawmaking bodies, bear abundant testimony of the new arrival, and that the proportions, scope, ambition and activity of the cult are such as to require attention at our hands.

Foresight in its ultimate analysis is insight logically developed. In medicine the artistic sense finds its highest expression in prognosis, and prognosis to have real value must predicate a scientific diagnosis.

The prognosis of Eddyism involves a thorough examination or inquiry into its causes—the manner and rate of its development—what it is as a philos-

ophy, as a religion, and what it is as a medical system. A word as to the mental attitude of the writer: is he in sympathy with his subject, Eddyism? Certainly he is not. However, the writer has the conviction that what he is doing is worth doing, and if worth doing, must be so done as to add something, throw some light upon the subject. He has no sympathy for the student whose effort is to find only that in a given case which is bad or good, or of a given color, because he remembers that prognosis is an appeal to the future, and that prognosis to be of any value must not exclude or overlook one element of truth, of right, of good; for these elements are powerful factors in determining growth and perpetuity, and like the precious metals and gems have persistent individuality, and are not injured even if wrapped up in, or hidden under piles of dirt, rubbish, poor rhetoric, bad grammar, false logic, or immoral precept. The prognosis of Eddyism supposes an examination which is fair, just, discriminating and judicially minded.

Mrs. Eddy tells us that her first writing upon the subject under consideration was copyrighted in 1870, but did not appear in print until 1876. "Science and Health," by the same author, appeared in 1875, and the Massachusetts Metaphysical College was opened in Boston, Mass., in 1881.

The *Boston Globe*, of Thursday, October 12, 1899, gives the full text

of a lecture delivered by Judge William G. Ewing, of Chicago, upon the occasion of the semi-annual gathering of the mother church, in which he tells us some things Eddyism has accomplished in the fifteen years last past. "It has drawn to its loyal support more than five hundred thousand adherents; has organized more than four hundred congregations; has built during the last five years many churches, ranging in cost from \$1000 to \$200,000; it has more than ten thousand practitioners, devoted to healing the sick; it has restored to health, happiness and hope more than seven hundred and fifty thousand of your fellow-men and mine, most of whom had hopelessly exhausted the remedies usually known to medical learning."

The writer does not feel called upon to vouch for the accuracy of all parts of this quotation, but believes that the statement fairly represents the fact, that Eddyism has grown and is growing at a rate more rapid and extensive than that heretofore attained by any sect or cult, religious or medical.

It is also worth noting that the followers of Eddyism are in a large majority recruited from those of our folk generally considered to be most generously equipped by education and reading with bright, logical and discriminating minds.

Before proceeding to ask the reason or reasons for this phenomenal growth it would seem to be in order to turn aside for a moment to see what Eddyism is, at least what it claims to be and to do. "Science and Health," a book of about 650 pages, of which some 168 editions of a 1000 copies each are said to have been sold, is the text-book of the cult. The scope of the work is indicated by its table of contents, where we find, "Science,

Theology, Medicine, Physiology, Creation, Science of Being, Marriage, Animal Magnetism, Prayer, Atonement and Eucharist." A careful reading of this book impresses one that while its author speaks with authority quite singular upon all of the topics treated, yet it is to theology and medicine more particularly that she has made an exhaustive contribution. In fact, that upon these subjects Mrs. Eddy claims to have been elected and inspired to say the final word. We read:

"In the year 1866 I discovered the Science of Metaphysical Healing and named it Eddyism."

"God had been graciously fitting me, during many years, for the reception of a final revelation of the absolute Principle of Scientific Mind-healing."

[NOTE.—Mrs. Eddy does not use the word Eddyism to designate her discovery—perhaps she was too modest,—but she must have sorely taxed her stock of synonyms for this title. I have noted with page of each over one hundred different words or phrases for the single idea, and I take the liberty of using in their places the word Eddyism. In so doing I am conscious that the mystical expression of the author is somewhat impaired, but believe that my readers will find their way to Mrs. Eddy's thought more readily; having found her meaning, the mystical dress may be added at leisure, and, further, that in work having at least a scientific side, brevity and accuracy are more to be desired than mystical embellishment.]

Page 1.—"Through Eddyism, religion and medicine are inspired with a diviner nature and essence, fresh pinions are given to faith and understanding, and mortals acquaint themselves more quickly with God."

Page 3.—"Eddyism reveals incontro-

vertibly that Mind is All-in-all, that the only realities are the divine Mind and idea. This great fact is not, however, seen to be supported by sensible evidence, until its Principle is demonstrated by healing the sick, and thus proven absolute and divine. This proof once seen, no other conclusion can be reached."

Page 7.—"God is the Principle of Eddyism. As there is but one God, there can be but one Principle in Eddyism; and there must be fixed rules for the demonstration of this divine Principle . . . The vital part, the heart and soul of Eddyism, is Love . . . The fundamental propositions of Eddyism are summarized in the four following, to me, self-evident propositions. Even if read backward, these propositions will be found to agree in statement and proof:

"(1) God is All.

"(2) God is Good, God is Mind.

"(3) God, Spirit, being all, nothing is matter.

"(4) Life, God, omnipotent Good, deny death, evil, sin, disease. Disease, sin, evil, death, deny Good, omnipotent God, Life."

Page 17.—"Eddyism shows conclusively how it is that matter seemeth to be, but is not. Eddyism rising above physical theories, excludes matter, resolves things into thoughts, and replaces the objects of material sense with spiritual ideas." . . .

"The revelation consists of two parts:

"(1) The rediscovery of Eddyism, through a spiritual sense of the Scriptures, and through the teachings of the Comforter, as promised by the Master.

"(2) The proof by present demonstration, that the so-called miracles of Jesus did not specially belong to a dispensation now ended, but that they illustrate an ever-operative divine Principle."

Page 62.—"Eddyism not only reveals the origin of all disease as wholly mental, but it also declares that all disease is cured by Mind."

Page 64.—"The so-called laws of matter are nothing but false beliefs in the presence of Intelligence and Life where Mind is not. This is the procuring cause of all disease. The opposite Truth—that Intelligence and Life are spiritual, never material—cures all disease."

Page 66.—"The idols of civilization are far more fatal to health and longevity than

the idols of barbarism. They call into action less faith than Buddhism, in a supreme governing Intelligence. The Esquimaux restore health by incantations, as effectually as civilized practitioners by their more studied methods. Is civilization only a higher form of idolatry, that man should bow down to a flesh-brush, to flannels, to baths, diet, exercise, and air?"

Page 67.—"When there are fewer doctors, and less thought is given to sanitary subjects, there will be better constitutions and less disease."

Page 69.—"Should all cases of organic disease be treated by a regular practitioner, and the Eddyist try his hand only on cases of hysteria, hypochondria and hallucination? One disease is no more unreal than another. All disease is the result of education, and can carry its ill effects no further than mortal mind maps out the way . . . Eddyism finds that decided types of acute disease, however severe, are quite as ready to yield to Truth as the less distinct type and chronic form of disease. It handles the most malignant contagion with perfect assurance."

Page 72.—"Treatises on anatomy, physiology and health, sustained by what is termed material law, are the promoters of sickness and disease."

Page 376.—"The remote cause of all disease is fear, or a mistaken belief—a conviction of the necessity and power of ill-health, and a conclusion that the mind is helpless to defend the body, and wholly incompetent to control it."

Page 380.—"If half the attention given to hygiene were given to the study of Eddyism, and its elevation of thought, this alone would usher in the millennium. Bathing and rubbing, to alter the secretions, or remove unhealthy exhalations from the cuticle, receive a useful rebuke from Eddyism."

Page 387.—"Admit the hypothesis, that food is requisite to sustain human life, and there follows the necessity for another admission, in the opposite direction, namely, that food has the power to destroy life, through its deficiency or excess, in quality or quantity . . . The fact is, food does not affect the existence of man; and this becomes self-evident when we learn that God is our only Life."

Page 392.—"Man is never sick; for

Mind is not sick, and matter cannot be. A false belief is both the tempter and the tempted, the sin and the sinner, the disease and its cause. It is well to be calm in sickness; to be hopeful is still better; but to understand that sickness is a delusion, and that Truth can destroy it is best of all, for it is the universal and perfect remedy."

Page 406.—"Every sort of sickness is a degree of insanity; that is, sickness is always hallucination . . . The supposition that we can correct insanity by the use of purgatives and narcotics is in itself a mild species of insanity."

Page 410.—"To prevent disease or to cure it mentally, let the Spirit destroy this dream of sense. If you wish to heal by argument, find the type of the ailment, get its name, and array your mental plea against the physical. Argue with the patient (mentally, not audibly) that he has no disease, and conform the argument to the evidence. Mentally insist that health is the everlasting fact, and sickness the temporal falsity. Then realize the presence of health, and the corporeal senses will respond 'So be it!'"

Page 416.—"Tumors, ulcers, tubercles, inflammation, pain, deformed spines, are all dream-shadows, dark images of mortal thought, which will flee before the light."

The above quotations will enable the reader to make the diagnosis of Eddyism as a system of medicine; as a revelation upon the nature of disease, the cause of disease, how disease is to be prevented, or cured. Whatever fault we may be inclined to find with the system it would seem to have at least the virtues of frankness and openness—the language is not ambiguous or the meaning obscure. It seems to be a definite, complete proposition, to be accepted or rejected, and one which may not be misunderstood.

Let us look again at "Science and Health" and see with what authority or claim to authority Eddyism is presented. We are of the opinion that the religious claim of Eddyism has been and is an important factor in the spread of the cult and will occupy a

large space in the question of prognosis.

Page 25.—"Must Eddyism come through the Christian churches, as some insist? Eddyism has come already, and come through the one whom God called."

Page 28.—"The true Logos is demonstrably Eddyism, the natural law of harmony, which overcomes discord—not because it is supernatural or preternatural, or because it is an infraction of divine law, but because it is the immutable law of Good."

Page 43.—"To-day Eddyism is demonstrated to be an immanent, eternal quality, or principle, instead of a phenomenal exhibition. Its discovery is the second coming of the Gospel of 'peace on earth and good will to men.' This coming is, as was promised by the Master, for its establishment as a permanent dispensation, to remain forever among men; but the mission of Eddyism now, as in the time of its first demonstrator, is not primarily one of physical healing. Now, as then, signs and wonders are wrought in the healing of physical disease; but these are only to demonstrate its divine origin, to attest the reality of its higher mission of healing the errors of mortal mind."

Page 227.—"VII. Life, Truth and Love constitute the triune God, or triply divine Principle. They represent a trinity in unity, three in one—the same in essence, though multifarious in office: God the Father; Jesus the type of Sonship; 'Eddyism, or the Holy Comforter.' These three express the threefold essential nature of the Infinite."

Page 322.—"Here let me give what I understand to be the spiritual interpretation of the Lord's Prayer:

"Our Father which art in Heaven.

"Our Father and Mother God, all harmonious."

Page 348.—"The magnitude of Jesus' work, his material disappearance before their eyes, his reappearance in idea, all enable the disciples to understand what Jesus had said. Heretofore they had only believed; now they understood. This understanding is what is meant by the descent of the Holy Ghost—that influx of Eddyism which so illuminated the Pentecostal Day, and is now repeating its ancient history."

Page 541.—"The Apocalypse" "John the Baptist prophesied the coming of the immaculate Jesus, and he saw in those days the spiritual idea as the Messiah, who would baptize with the Holy Ghost—Eddyism. As Elias represents the Fatherhood of God through Jesus, so the Revelator completes this figure with woman, as the spiritual idea or type of God's Motherhood."

Page 545.—Revelations, xii. 5: "And she brought forth a man-child, who was to rule all nations with a rod of iron; and her child was caught up unto God and to his throne. . . . The impersonation of the spiritual idea had a brief history in the earthly life of our blessed Master; but 'of his kingdom there shall be no end,' for God's idea will eventually rule all nations and peoples—imperatively, absolutely finally—with Eddyism. This immaculate idea, presented first by man and last by woman, will baptize with fire; and the fiery baptism will burn up the chaff of error with the fervent heat of Truth and Love, melting and purifying even the gold of human character."

Page 548.—"Self-abnegation, by which we lay down all for truth, or Christ, in our warfare against error, is a rule in Eddyism. This rule clearly interprets God as divine Principle, as Life, represented by the Father; as Truth, represented by the Son; as Love, represented by the Mother."

Page 567.—"Glossary. Holy Ghost. Eddyism; the developments of eternal Life, Truth and Love."

Page 569.—"Glossary. Kingdom of Heaven. The reign of harmony in Eddyism; the realm of unerring, eternal and omnipotent mind; the atmosphere of Spirit, where Soul is supreme."

Page 571.—"Glossary. Mother. God; divine and eternal Principle, Life, Truth and Love."

We have now seen two sides of this case, a medical and a religious side.

As a medical system Eddyism claims to give the final word to the art and the science of healing—to make obsolete and to supersede the sciences of anatomy, physiology, pathology, surgery, pharmacy, therapeutics, obstetrics, and hygiene; and this claim is backed up with the alike emphatic and

ambitious demand upon religious credulity; that the author was divinely inspired for her task; that Eddyism is the Logos; that it is the second coming of Christ; that it is the Holy Comforter; that the reign of Eddyism shall be universal and without end.

With these facts clearly in our minds, we may with advantage recall the astounding rapidity of rise, and the enormous proportions already attained by this cult; for we will then be ready to ask ourselves the question: Why? Why?

The writer has the most profound conviction that Eddyism is an intellectual distemper of a contagious character; that it is now epidemic in this country; and that in its causation, its rise and spread, it presents a close analogy to the great epidemics of history. We may not say that we know all about the great devastating epidemics, or all about any of them; but we may say that it is well known that with any or all the predisposing causes were the more important, the more potential factors.

What are the predisposing causes of Eddyism? What bearing have these causes upon the prognosis of Eddyism? The answer to these questions need take but small space, and will constitute what the writer has to contribute to this subject, which he deems of sufficient importance to merit publication.

We seem to be quite in the habit of interpreting sociological or physical phenomena by laying peculiar or unusual stress or emphasis upon the incidental, to the neglect of the primary cause. When the avalanche thunders down the mountain side, burying or wrecking hamlet or village, we remark its abruptness, its unexpectedness, its destructive-

ness; the recoil of the hunter's rifle, the insignificant exciting cause from which it started; and we forget to consider that with a given activity of mountain side and a gradual accumulation of falling snow, it is but a question of time when the habitual operation of the natural forces involved will produce the cataclysm, the unexpected, the inevitable

By the same misuse of interpretation the John Brown raid is supposed to have brought on the Civil War, forgetting the irrepressible conflict between the sections upon the greater question of state rights.

To the writer it seems obvious that Mrs. Eddy and "Science and Health" would have been quite without vogue but for the fact that abundant preparation had been made for them in our so-called scientific and religious circles, by homœopathy and individualism in religion.

The case against homœopathy is easily made; the facts in evidence are abundant, the medical mind is accustomed to the discussion. We have no prejudice to be jostled by the presentation, and in making the case we do in part pay off some long-standing scores.

Eddyism is pseudo, look at it as you will, but when viewed from its scientific side the half-truths, the faulty observations, the labored reasoning to explain that which never happened, become grotesquely plain; as an exhibition of pseudo-science Eddyism is the heir-at-law of homœopathy.

For more than a century the adherents of homœopathy have been propagating notions in pseudo-physics, pseudo-pathology, and pseudo-therapy; in physics, that matter had energy and potentiality in inverse

proportion to its weight; in pathology, that the nature and cause of disease were dynamic and immaterial; in therapeutics, that cures which had not taken place were effected by medicines which had not been administered.

Misled by this false teaching, always given in scientific language and with constant appeal to observation and apparent demonstration, millions of our people have been constantly exposed to critical hypnotism, and have habitually accustomed themselves to self-deception in two important classes of mental action; to readily overlook obvious physical phenomena; and from habitual overuse of introspection, to easily confound phases of sensation or emotion with conditions of bodily disease.

Upon this well laid foundation of mental degeneracy, where matter became potent as it approached immateriality, and fancy became all-powerful as it retreated further and further into the recesses of personality, Mrs. Eddy reared her structure—by the simple logical extension of the two elements in the direction they were already going. In Eddyism matter ceases to exist—and fancy becomes all in all.

The family features of homœopathy and Eddyism are so striking as to make doubt of the paternity impossible, even if we did not know that the woman was once a successful practitioner of homœopathy, and if she had not given us a lucid statement of how her labors in the early morning twilight of homœopathy prepared her mind for the full-orbed midday radiance of Eddyism.—"Science and Health," pp. 46, 49, 50, 52, 369, 397.

In presenting the rôle which individualism in religion has played in preparing the way for Eddyism, the

writer is aware that he approaches the most difficult, as it is the most important part of his contention; the facts are less obvious, medical men are rather intolerant of thought or discussion having a religious trend, or presuming accurate religious instruction, or serious religious conviction; the strong tide of prejudice which bore us so bravely and so comfortably to a conclusion as to homœopathy, in this instance runs the opposite way, and has the acquired velocity and momentum of more than three centuries; and, besides, medical men, notwithstanding their own personal indifference, or mayhap because of it, jealously guard the religious habits and beliefs of their mothers and other women-folk.

However, Eddyism is with us, and has a religious side, has come to stay—the question is how long; and in that question is involved the examination of some of our religious habits and principles, needs and opportunities, and to most of us Christianity and individualistic religion are synonymous terms.

The reader need not be alarmed; we do not propose to more than point to facts not in dispute, which have operated and are still effective, in making many among our best and most religious people easy victims to the absurd, monstrous, and blasphemous, or insane, demands of Eddyism.

When, at the Reformation period, our forefathers in England and upon the Continent broke away from institutional Christianity, no matter what they gained they certainly seriously impaired desirable safeguards, which the same red-blooded, self-willed men sorely needed for their protection and best development; in this list the writer

would place veneration for those in authority and for authority. We maintain that respect and veneration for authority and for those in authority is an elemental quality of right character, that is just as important in a pure democracy as in any of the earlier forms of government. Eddyism is not the only sign of degeneracy which seems to come through this loss—our want of dignity and manners, Mormonism, and our divorce scandals, our hunger and thirst for patent medicines, our small proportion of marriages, and our small birth-rate point a finger of warning in the same direction.

Closely related to loss of respect for authority came the seemingly innocent habit of individual interpretation of Holy Scripture. When we contemplate the waste of our several hundred Protestant sects, the evil possibilities of individual interpretation of Scripture may not be overlooked. Eddyism is a flagrant instance of the disastrous results of this seemingly innocent but actually pernicious habit.

It may be urged that our Protestant forefathers were in no way responsible for the absurdities, vagaries, and immoralities of Mormonism and Eddyism, and that the Mormon and the healer in no way represent the spirit or the letter of Protestantism; and the answer is that the Mormon and the healer claim to do just that, and the logic is the same in either case. Playing with religion, playing at church-making, with the bestowing of sacred orders, with the administration of sacraments, if not a mark of degeneracy, inevitably leads to degeneration.

It would seem that there is no escape from the conclusion that individualism in religion is in a large measure responsible for the widespread agnosticism and bald materialism of our so-

called cultured classes. Eddyism is in many cases a natural reaction against this faithless, hopeless pessimism; the religious instinct being structural, fundamental, physiological and therefore ineradicable.

Modern students of sociology agree in considering individualism a serious disease; that the man with one idea, the faddist, the hobbyist, the socialist, the revolutionist, the anarchist, are at times the various phases or instances of overdeveloped or diseased individualism. The beginnings of this degeneration run back to the early days of Protestantism, when the individual got more liberty than he knew what to do with, more than was well for his individuality.

The bearing of these observations upon the question of the rise, spread and perpetuity of Eddyism, is because these causes, if existing, have been in operation for centuries, that religious convictions and prejudices readily pass into habits and become a part of character—and that these causes have been acting upon the whole people.

Let us consider our own affairs for a moment. How stands the case of the medical profession? Has history been repeating itself—was there anything in the practice of medicine a century and more ago which made it easy for homeopathy to get established—is there anything in the practice of medicine to-day that has prepared the way for Eddyism? Century-endings seem to afford favorable opportunities for review or self-examination; this gives a double reason why medical men should seriously take up the question of what responsibility, if any, has the profession of medicine for Eddyism, remembering that it is expedient at times to consider our unworthiness.

The last half of the century now about to end will undoubtedly be noted throughout all generations for the remarkable advance of the science of medicine; to every lover of his profession, to every lover of his fellow-men, the innumerable host of sufferers, this advance has been most encouraging, and an occasion for hearty thankfulness to Almighty God, the Giver of all good.

However, are we quite prepared to say that during these red-letter days the profession of medicine has been altogether free from the damaging thought and work of the pseudo-scientist—the man who loudly proclaims his entire devotion to science, who freely uses its instruments and terminology, who speaks its language, but who has so far missed its meek and humble spirit as to forget that medicine is an art as well as a science; that ours is the healing art, and that to practice the healing art to noblest purpose, and to the best success, one may not neglect his utmost endeavor to inspire confidence, and courage, to keep alive expectation and hope, to feed and to nourish those nobler qualities of the mind, even through dark days of anxiety, of doubt, of delay, of hope deferred; until the victory of recovery is won from apparent defeat; or expectation and hope are carried up into a yet more glorious victory, a willing resignation into the arms of the All Father?

Is it not true that the use of our new and invaluable instruments of precision, whereby the ability to make accurate diagnoses has immensely increased, has made many of us smart in the work of detecting ways in which the patient may die; and are we always quite successful in hiding that smartness—does it not too often escape from

us and from small and choice circles find its way to larger and general circulation, that Mr. or Mrs. So-and-So has such and such, and can't possibly live a month?

From personal knowledge, from current medical gossip, from the secular press, and from reports of the experience meetings of the healers, the writer has the profound conviction that in the way of violating the secrecy and privacy of the operating and consulting-room; in the habit of making too frequent and too long-distance unfavorable prognoses, the pseudo-scientist of the medical profession has been preparing the way for Eddyism.

Undoubtedly the reader is saying, with more or less successfully concealed impatience: What of the case, what ails the patient, what is your diagnosis, what is Eddyism? Surely you may not make a prognosis until you have made a diagnosis. We have heard of the family history, the heredity, of the predisposing causes, and of the exciting causes, of Protestantism, of homœopathy, of the pseudo-scientist in medicine; but what do you think of the patient, of Eddyism?

The writer has studied the literature of Eddyism with considerable care, "Science and Health" with great particularity, and has but one idea concerning it or its author; the premise of the book is a fancy, a conceit—that matter and sin, sickness and death are delusions. The truth of the premise is established by the testimony of dreams and diseased imaginations. Divine authority and absolute infallibility is claimed for it as a medical system because on trying it people have changed their minds, and have thought they were well where before they thought they were sick. The author is a paranoiac. She had, or says she

had, auditory hallucinations in childhood, was ill during most of her early and middle adult life, and her ill-health was cured when she felt herself divinely inspired to write "Science and Health," when she was in the early years of old age. She claims to have been under a general divine inspiration in her work, with special divine guidance at particular times and for especial purposes, as when she fixed the price of tuition at her college; she claims that Eddyism is the "true Logos," again that Eddyism is the "Holy Comforter," that she discovered Eddyism in 1866, again that Eddyism came as "the Descent of the Holy Ghost" on "Pentecostal Day"; she teaches that our Lord came to teach and to demonstrate Eddyism; but did not thoroughly understand the system, "he had not conquered all the beliefs of the flesh, or his sense of material life." Page 338

She teaches that God is woman, and directs that prayer be offered to "Our Father and Mother God," that "Mother" is God, and advises that she (Mrs. Eddy) be called mother, and when she spoke "to her followers assembled at the annual meeting of the Mother Church, Tuesday afternoon, June 6, 1899, "it was not then Mrs. Eddy whom the people heard, but they listened instead to the voice of God."—*Christian Science Sentinel*, June 15th, 1899, page 6.

It would seem that medical men could scarcely hold two opinions as to the mental unsoundness of the author of Eddyism; the writer's mind was held from such a conclusion for a time, not from anything in the book, but from recalling the money-making habit which seems to attend every step and stage of the cult.

In case it should finally be decided

that Mrs. Eddy is to be given credit for the book and the most successful money-making methods she will thereby become a rare study for the psychologist and the psychiatrist, but the book alone makes her interesting.

Now, as to prognosis: Eddyism is here, and seems likely to hold attention at least as long as homœopathy has held, and when it passes, as homœopathy is passing, will leave behind no more bitter disappointments, and quite as much of grateful recollection.

There are those who would credit homœopathy with important contributions to medicine in the way of obliging her to adopt more palatable and popular pharmacy; the vagaries, absurdities and insanity of Eddyism may make a more valuable contribution to medicine in the direction of mental science.

The coming century may establish a popular conviction the belief of the best men who have left records of their thoughts during the Christian era, that man has a mortal body and a human mind, but that man is a living soul; that medicine is an art having a scientific foundation, and freely using scientific methods and helps; but that, as an art, it must develop in harmony with all the conditions, requirements and possibilities of man's nature—past, present and future.

APPENDIX.

Synonyms used by Mrs. Eddy in "Science and Health," meaning Eddyism, Eddyite, Eddyistic or Eddyistically, paged as they occur in the book:

Science of Metaphysical Healing, 1
Christian Science, 1

Scientific Mind-healing, 1
Divine Science, 2
Mind Science, 3
Mind Healing, 3
Divine Metaphysics, 5
Scientifically Christian, 6
The Perfect Principle of Healing, 6
Science, 8
Spirit, 11
The Christ, 12
Truth, 12
The Science of Mind-Healing, 14
Science of Being, 15
The Science of Soul, 16
The Science of Mind, 17
The Divine Science of Mind-Healing, 17
Scientific, 17
Spiritual Science, 20
The Science of Abstract Being, 23
Divine Principle, 29
Truth of Being, 30
The Divine Principle of Man, 31
Christianity, 34
Christian, 34
Scientific Religion, 35
Metaphysical Healing, 35
Scientific Demonstration, 36
Science of Christian Healing, 38
Scientific Healing, 39
Christian Healing, 41
Science of Healing, 60
Life in Science, 60
Paradise Regained, 63
Divine Principle and Practice of Immortal Mind, 64
Immortal Mind, 71
Truth-Power, 71
Law of Christ, 75
Spiritual and Divine Principle of Man, 84
Facts of Science and Their Principle, 91
Science of Christianity, 99
Spiritual Perception, 99
Kingdom of Heaven, 104
Principle and Proof of Christianity, 106
Real Being, 106
Metaphysical Science, 113
Coming of Christ, 126
Appearing of Truth, 126
Utopian Goal, 129
Christian Requirements of Science, 131
Truth-Cure, 133
Baptism of Spirit, 137
Divine Science of Man, 138
True Science of Being, 145
Scientific Being, 155
Divine Healing, 155

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|---|---------------------------------------|
| Principle of Brotherhood, 172 | Christ-Healing, 349 |
| Principle of Universe, 172 | Life Which is God, 352 |
| Science of Life, 199 | Gospel of Healing, 360 |
| Christian and Scientific, 259 | Christ's Immortal Ideal, 360 |
| Mind-Reading, 260 | Christ-Cure,* 366 |
| Omnipresence of Mind, 260 | Principle of Life, 378 |
| Science of Reading Mortal Mind, 260 | Queen of Life, 435 |
| Christ's Second Coming, 261 | Principle of Mind-Healing, 439 |
| Messiahship of Truth, 261 | Science of Mental Healing, 440 |
| Life That is Truth, 263 | Science of Healing Through Mind, 441 |
| Truth That is Life, 263 | Principle, 457 |
| Immortal Harmony to Being, 263 | Science of Man's Eternal Harmony, 478 |
| System of Truth and Love, 264 | Word of God, 485 |
| Immortality and Life, 264 | Science of Creation, 491 |
| Scientifically Spiritual, 264 | Scientific Truth, 502 |
| Scientific Demonstration of Spirit, 265 | Christ Idea, 550 |
| Christianly Scientific, 281 | Church, 562 |
| Spirit Rule of Christian Healing, 297 | Elias, 564 |
| Science of Spirit, 336 | Euphrates, 564 |
| Christ-Principle, 339 | Gad, 565 |
| Christian Healing and Its Science, 345 | Hiddekel, 567 |
| Truth and Love, 346 | Holy Ghost, 567 |
| Descent of the Holy Ghost, 348 | New Jerusalem, 571 |

INFLUENCE OF THE CLINICAL LABORATORY IN SURGERY.*

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A PRECEDENT, established for nearly a century, requires an annual address by the president of this society. The task is at once difficult and pleasant, yet mindful of the high order of attainment uniformly shown in the addresses of my predecessors, I approach it with many misgivings.

It has been the custom in the past to treat of some subject relating to the position of the physician in public life, or to current medical progress or medical or sanitary reform. At the

present time no such subject presented itself that would not lead to an unprofitable repetition of that which has been already said much better by others. Again I do not find myself in position to present to you the results of any original investigation upon my part. After reflection I have concluded that all purposes would be best served by the presentation of a matter concerning which I can, at least, claim a practical understanding: The influence of the clinical laboratory in surgery.

There is an impression current in the minds of many that the responsibility of the modern surgeon is not so great as that of his predecessor. Sur-

* Presidential address at the 94th Annual Meeting of the Medical Society State of New York, held at Albany, January 30, 31, and February 1, 1900.

gery is now an art so perfect in all its details; so certain in its results that anxieties are of the past. A little reflection will show, however, that that very desirable condition does not exist. The loss of a patient from septic infection after an uncomplicated compound fracture will not be as readily forgiven to-day as it was thirty years ago; nor would eleven deaths from sepsis after seventeen amputations done in a year be viewed with complacency either by hospital boards, the profession or the people. Yet surgeons in the not too remote past maintained themselves in high positions with so serious mortalities for which they were not held accountable.

The surgery of the last three decades was nearly all the surgery of necessity and usually undertaken as an immediate and life-saving agency. The modern surgery is largely a surgery of election. Operations are undertaken because of the safety of the procedure by patients who might live several years without surgical intervention. The loss of a patient from sepsis after a hysterectomy for small fibroid tumor, or after an interval operation for appendicitis is too deplorable to contemplate. These operations were not done by our predecessors and they assumed no responsibility in the matter.

The discoveries of Joseph Lister and their application to operative surgery marked the beginning of a new era. The introductory sentences of that notable first report to the British Medical Association in 1867 are a repetition of the observations made nearly a century before by John Hunter on differences observed in the healing of simple and compound fractures, and that wound fever and

sepsis were due to the air and its impurities. Lister recognized the agency of bacteria in the causation of septic processes, but to him in his earlier labors they were an intangible enemy of unknown form and uncertain habitation. They were in the air and the batteries of carbolic spray were opened upon them.

Pasteur studied the organisms found in the secretion of wounds and cultivated them, but it remained to Koch to so develop bacteriological technique that through improved methods he was able to differentiate the micro-organisms of the infectious diseases. Bacteriological investigation of other sources of septic infection than the air were now pursued with great enthusiasm and their well-nigh universal distribution found. No one appreciated more fully than Mr. Lister the importance of these discoveries, and at the close of an address by Pasteur at the seventh international medical congress, he took occasion to congratulate both Pasteur and Koch on having established beyond dispute, through laboratory research, the first principles of modern surgery.

Schimmelbusch, appreciating the importance of this form of investigation, organized a bacteriological laboratory as an adjunct to the surgical clinic and was among the first to undertake routine bacteriological provings in general surgical work. The results of his investigation lead to the development of the aseptic technique of Von Bergmann in contradistinction to the antiseptic technique of Lister. It was my privilege to assist Schimmelbusch in his early efforts and the detail arranged by him will serve now for all necessary requirements.

The continued provings by cultural

methods of our surgical technique is a first requisite for work of a high standard. However much surgical technique of different surgeons may differ in detail, it has its primary basis in the laboratory. To establish a given method of sterilization as effectual by a single series of cultural provings is not sufficient. It will be found that unless a culture is likely to be taken at any time from any package of dressings, sutures or other materials, variations in the methods of sterilization may be made by the nurse or assistant. It has been my practise to take at irregular intervals, and without notice, provings from the operating rooms, from the dressings, sutures, ligatures, towels, instruments, water, hands of the operator and assistant and skin of the patient. In aseptic cases these cultures are taken at the end of the operation instead of the beginning. At the present time we are conducting a series of experiments in skin disinfection by the different methods. The only useful fact so far determined is that as yet no uniformly effective method has been devised, although each has a large percentage of successes. The methods of skin disinfection so far employed have been: the permanganate of potash, oxalic acid, the chloride of lime, carbonate of soda, and a plan of my own which is a modification of the sublimate, alcohol method involving the use of turpentine as a solvent.

As illustrating the procedure, allow me to present to you these series of cultures, each series made up as follows: Two agar slants, one glycerin bouillon culture in flask and one agar plate. The first culture on agar is taken by scraping the skin over the line of incision after the general bath and before any special preparations

are made. The second on agar is taken from the skin after all preparations are completed and just before the primary incision. The third is a small portion of skin removed from the border of the incision and placed in glycerin bouillon. All are placed in the thermostat and after twenty-four hours the bouillon is plated. All colonies developing are carefully isolated, differentiated and recorded in proper form. If, from any portion of the hospital an unusual number of failures present, the head nurse is informed or an investigation inaugurated. In addition, cultures are taken from the nurse's hands having charge of the preparation of the patient. The professional pride shown by the nurses in the work is very gratifying. While developing colonies occasionally adds a sorrow, yet it is soon dissipated by subsequent successes. In this way a high standard is established and a proper esprit de corps maintained. Nor is this all the advantages acquired. We hope finally to be able to establish a method of skin disinfection which is uniformly effectual with the minimum discomfort to the patient.

The uniform disinfection of the hands of the surgeon and his assistants by any method, is settled negatively in my mind. Out of several hundred cultures taken a sufficient number developed colonies under the most unexpected circumstances, to demonstrate the necessity of rubber gloves in order to exclude a serious menace to the patient. They are now worn at all operations regardless of their character and in the final preparation of the field of operation. All dressing of septic wounds is made with gloves. Our investigations have

shown that it is far easier to avoid septic material than it is to disinfect the hands afterward.

It is only proper in this relation to refer to the fact that catgut for sutures and ligatures should never be employed without cultural provings of each portion after fresh preparation.

The whole fabric of surgical technique depends for its efficiency upon the routine laboratory investigation and upon nothing else. The utility of the laboratory in arresting what may be called septic storms is unquestionable. Occasionally a series of infected cases will present themselves although great care is exercised. This is not an isolated experience but occurs in many of the best clinics under the most careful surgeons. In my experience it is usually a staphylococcus pyogenes aureus infection of virulent type. The condition requires the most searching investigation, and that major surgery be made to remain in abeyance until the infection is traced to its source and destroyed.

Nor is the utility of the laboratory ended here. In the investigation of obscure genito-urinary diseases it is most useful. The exclusion of early renal tuberculosis requires all the refinements of modern methods of investigation. The evidence of cover-slip staining, culture and animal inoculation may be required in order to demonstrate or exclude the disease. The further exact methods of diagnosis are frequently sufficient to indicate the necessity for early and successful operative intervention in cases where under ordinary conditions delay might involve grave danger to the patient.

The nomenclature of inflammation, surgical fever, septicemia, pyemia and sapremia must inevitably change

for more specific and descriptive terminology, which undoubtedly will employ terms having reference to the organisms acting as causative factors in the infectious process. The chapters of surgery including these subjects will be rewritten from another standpoint and become more intelligible than they are now.

Delayed shock and fat embolism has been a very present refuge in cases of overwhelming sepsis or intoxication. Delayed shock is not shock—it is either hemorrhage or sepsis; nothing else. All the cases of delayed shock that have come either directly or indirectly under my observation were either confirmed as sepsis or hemorrhage at autopsy or were buried with such unseemly haste that no examination could be made. There can be no doubt but that fat embolism does occur occasionally, but it is rare. Frequently obscure general infections not associated with pronounced symptoms terminate fatally very suddenly. It has been my misfortune to see a fatal post-typhoid infection after an operation for extra-uterine pregnancy in a patient already convalescent from the fever.

The bacillus pyocyaneus is capable of originating a general septic process the symptoms of which are not sufficiently uniform to permit of general classification. Cultural examination of the blood has frequently demonstrated the condition. In other obscure septic processes, more especially those with no demonstrable points from which the infection was introduced, cultures taken from the blood will demonstrate the nature of attending joint involvement. Information of much prognostic value is often obtained in this manner. Patients do not recover when there is

either a general streptococcus or staphylococcus infection, but may when the infectious bacterium is the bacillus pyocyaneus or the colon.

Your attention has been chiefly called to the established achievements of the laboratory and the important results already obtained. Serum therapy as an agent for the relief of surgical sepsis has been disappointing. The anti-streptococcus serum of Marmorek has not justified the earlier claims of its discoverer. However, we have seen enough to encourage us in the perfection of the serum. It can hardly be expected to cure mixed or unusual varieties of streptococcus infections. As a preliminary to further study of anti-streptococcus serums, a thorough reinvestigation of the streptococcus order is essential. There are always many facts observed that indicate that there are many sub-varieties of streptococcus presenting independent clinical characteristics. Varieties must be isolated and so combined in culture that the resulting serum is antidotal to the kind found at the seat of the infection. The utility of the serum treatment of diphtheria is so established that there can be no doubt but that others will be discovered equally effectual. The tetanus serum certainly possesses antidotal properties. When given in suitable quantities, I have invariably seen improvement follow its use and in one case I believe it was a life-saving agent. In this latter case nearly five hundred cubic centimeters of serum was given in two doses. In my experience the prescribed dose is far below the quantity required. Enough results have been obtained, however, to justify further and most painstaking investigation.

Serum therapy must, however, be

employed in conjunction with laboratory methods if it is to occupy an important position in the treatment of surgical infections.

The discovery of actinomycosis and its cause, the ray fungus, has attracted the investigation of other orders of vegetable origin closely allied to bacteria. Some of the yeasts and moulds are pathogenic to man. The investigation of the oriental boil, madura foot and allied conditions has been fruitful and allows us to hope that the next decade will demonstrate beyond dispute etiology of other obscure problems of surgery.

The apparent increase of cancer has attracted universal attention and many indefatigable workers are now reinvestigating the disease. Already much that is promising has been determined. At this meeting a report will be presented embodying all the latest discoveries in this very important department of endeavor. The task may appear beyond our powers. It will involve a radical departure from the old and require new methods of investigation. The problems yet to be solved cannot present to us greater difficulties than did the problems already solved present to those who have so gloriously contributed to the honor of modern surgery. The newer discoverers will meet the same incredulity, the same opposition as did Lister, Pasteur and Koch.

The laboratory has other tasks to perform besides those already considered. The study of the secretory and excretory functions of the body has an importance hardly to be overestimated. Unfortunately suppression of urine and intestinal paralysis play an important rôle in surgical mortality.

The examination of urine requires

further investigation than is found in color, reaction, specific gravity, sediment, albumen and sugar tests. The total elimination of solids by the kidneys during twenty-four hours is an important problem where anesthesia is involved. The presence of peptone, indol, indican and other albuminoid principles are an evidence of disordered metabolism due to disturbances of the normal functions of the liver and intestines. The wisdom of undertaking any serious surgical operation without the fullest inquiry into the condition of the intestinal tube and kidneys is doubtful. Frequently this involves delay, but I have never regretted a few days waiting. On the contrary, some of my greatest misfortunes have come through undue haste at the solicitation of the patient and attending physician.

The routine examination of the blood is not less essential than either chemical or bacteriological investigations. For example, the approximate estimate by von Fleischl's method of the hemoglobin yields very important information after severe concealed hemorrhage such as occurs in ectopic gestation, rupture of aortic aneurism or internal hemorrhage due to the rupture of a kidney, the liver or spleen. Mickulicz has established a rule never to operate when the hemoglobin is under thirty per cent. It occurs to me that such a rule is open to many objections, yet the estimate is none the less valuable as an indication for conserving all the blood possible during the operation.

On occasion it is extremely desirable to decide for the benefit of the patient whether the symptoms presented are those of shock alone or of shock associated with hemorrhage. For example, every surgeon will appreciate

the following conditions: A patient is operated upon by the side to side method of doing hysterectomy, during the early morning for a large fibroid tumor, all hemorrhage is arrested, the stump stitched over and the abdominal wound closed without drainage. Her condition remains favorable during the day but late in the evening the pulse rate rises rapidly, the patient becomes restless and the question arises whether or not secondary hemorrhage has taken place. Under such circumstances an estimate of the hemoglobin in the blood compared with the estimate before the operation will be of inestimable advantage and furnish an indication either for opening the wound or the institution of some other line of treatment not indicated for hemorrhage.

Bierfreund has carefully examined and tabulated the results of his investigations of the hemoglobin in a number of cases of malignant disease. It has been found in all of them that the hemoglobin is far below normal, that operations are associated with a very considerable loss and that the hemoglobin in the blood never again rises to a normal point, even months after the operation is completed and the patient's condition materially improved. This is a very important discovery and should lend material assistance to us in deciding for or against the propriety of operating in advanced malignant diseases.

The question of rigors arising before or after operation is an important one. In the years gone by, very frequently a chill after an operation was attributed to a prior malarial affection or to pure nervousness. It is always a matter of first importance to decide this matter by exclusion at once. The so-called nervous chill, concerning

which a great amount of scepticism may exist, is not associated with the presence of the plasmodium malarie or pronounced leucocytosis. The septic chill on the other hand is not associated with the plasmodium malarie in the blood. This fact was of considerable comfort to me in my late service in the army. It was my fortune to have a considerable number of the wounded after the battle of Santiago placed in my care. A number of these soldiers also suffered from malaria, and it frequently required the microscopic examination of the blood to determine whether the rigors were due to septic infection or malarial poisoning. This was particularly more interesting to me because the malaria from which the men suffered presented no very uniform or regular type.

The surgeon is frequently called upon to determine the propriety of operating upon tumors in the neighborhood of the spleen, the differential diagnosis of which is frequently attended with many difficulties. The importance of excluding myelogenous leucemia is very great. To make an exploratory incision, to find a leucemic spleen is quite inexcusable in modern surgery because the operator has not availed himself of all the methods of diagnosis. This is equally true in cases of lymphatic leucemia. It is a great misfortune for a patient to have one or two groups of leucemic glands extirpated. The blood condition will never recover from the necessary hemorrhage produced by the operation, and the patient's life will be correspondingly shortened by surgical intervention. On the other hand, a differential blood count will furnish indication for the removal of glandular sarcoma and of the lymphosar-

comatous nodes of Hodgkin's disease. There is no method by which the surgeon can determine the precise nature of the difficulty which confronts him without recourse to blood analysis.

A careful estimate of the degree of leucocytosis frequently gives an important indication for an attack of obscure intra-abdominal conditions. It is of material advantage in deciding whether in a given case you have a hydronephrosis, floating kidney, impacted cecum, a distended gall-bladder, typhoid fever or appendicitis. An increasing leucocytosis when the leucocytes present adult types, or the so-called polynuclears, is always an indication for operation in appendicitis. In obscure intra-abdominal conditions, with evidences of intestinal obstruction, which may be either malignant, simple, obstructive or inflammatory, a careful blood count is frequently of advantage. If under such circumstances the blood is found normal, non-inflammatory obstruction is reasonably assured. If, on the other hand, a considerable leucocytosis exists, says of 15,000 or more, together with an increase of fibrine in the blood an inflammatory cause may be suspected. Still again, if together with the leucocytosis, some distortion in the form of the red blood corpuscles exists, together with reduced hemoglobin and a small amount of pus and mucus in the feces, the diagnosis of malignancy is extremely probable.

On occasion the differentiation of neuralgias, gall-stone and renal colic is extremely important. When unattended by inflammatory conditions, it will be found that under such conditions the blood is normal, or at least is not associated with sufficient change to indicate a specific pathological condition.

Time does not afford the opportunity of indicating except in this very general way the usefulness and extent to which this method of clinical investigation may be carried. It certainly opened up a new, large, very promising and very useful field of investigation—one by means of which we can still further hope to improve the methods of modern surgery. All of these methods of investigation which I have presented to you require a vast amount of time for their performance. They form one of the best reasons why modern surgery is best done in hospitals which now afford every facility for clinical investigation. The amount of technical requirements demanded of the modern surgeon are far different from those required of his immediate predecessor. Modern surgery is not an art to be assumed at once. It is a science which requires infinite painstaking, conscientious labor, and an amount of technical training, not to be attained in any post-graduate course of six months duration in any school with which I am familiar.

I like to feel that I can claim some little singleness of purpose in following the pursuits already indicated, and none are more conscious than I of my own shortcomings.

A careful consideration of the responsibilities of the surgeon leads to the personal belief that the following outline presents about the least degree of qualification which is demanded of the operating surgeon under existing condition. There is an oft repeated formula that all surgeons should at least have five years' experience in the general practise of medicine before entering upon the practise of surgery. Nearly all the older surgeons have to an extent continued such a general

practice throughout their careers. The demands of modern surgery will not permit of such a course. The recent medical graduate who determines upon a surgical career will perfect himself far better by a two years' service as a hospital interne in a well regulated hospital, taking all the service in course. This will afford him the opportunity of perfecting himself in clinical diagnosis, including the usual pathological, urinary, blood and microscopic examinations. It will require his entire time to develop any important degree of proficiency in these departments. The two subsequent years may be profitably spent in laboratories for physiological chemistry, general and comparative pathology, bacteriology, anatomy and experimental surgery. These courses will of necessity be taken at large hospitals or universities where abundant material is offered for investigation. During this time his bedside experience will be necessarily limited, but the advantages of an out-door service may be secured. He is now in position to assume an assistantship in the operating-room of the surgical clinic and to begin the actual life work, and at the conclusion of another year is ready to assume the responsibilities of operative surgery for himself.

An inventory of his attainments is useful: Five years bedside experience in general diseases, three years laboratory experience in physiological chemistry, anatomy, comparative pathology, bacteriology, operative surgery on the cadaver, blood analysis, and, finally, a year's actual work at the operating table. Such a course of post-graduate study faithfully pursued will give advantages that are inestimable. The highest order of work demands all these attainments. The

modern surgeon must be equally at home at the bedside, in the clinic and in the laboratory. He must be able to direct, if not conduct, each depart-

ment. They are dependent each part upon the other and require equal cultivation in order that the symmetry of the whole may be maintained.

CLASSIFICATION OF INFECTIOUS DISEASES*

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MEDICAL terms become important as such in proportion to their influence upon conduct. When the effect of the wrong use of some such terms may needlessly disturb the affairs of a household and seriously alter the natural relations of its members to each other, or alarm an entire neighborhood, or empty a town, or greatly derange the commerce of a country, it certainly behoves the medical profession to endeavor to prevent all such misunderstandings by making the meaning of such terms as definite as possible. Instead, however, of this having been the case in the past, there is no more unpleasant feature in the history of medicine than the long confusion, often marked by angry controversy, which has characterized the use by medical men of the terms intended to be descriptive of the nature of infectious diseases.

How untoward in its results such confusion may be is well illustrated by the variety of ways in which the term "contagious" has exerted an influence for evil both on the profession and on the public. No word can escape entirely from association with its

primary meaning, and particularly no descriptive name can wholly lose the original hue of its derivation. To spread by contagion means to spread by touch, and it is impossible thoroughly to dispossess anyone's mind, whether medical or non-medical, of certain suggestions connected with this first significance of the term. It was thus that this primary meaning of the word contagious generated the notion that a sort of continuity, like the spread of a fire among combustibles, was the essential element in all contagious diseases, and hence if any other diseases did not so spread, but could spring up separately without contact with previous cases, it was accordingly inferred that there could be no community between them and the contagious diseases.

The term, contagion, in fact, monopolized the mental conception entirely, to the exclusion of every other, with the result that when a particular epidemic disease was shown to spread in a community without personal contact with the sick, it was forthwith pronounced to be wholly different in kind from contagious diseases, and the public was exhorted to dismiss all fear of its having any relationship whatever to such diseases, and to act accordingly. The facts were that the

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only difference between their respective classes was a difference in form, but not in kind, a difference in the mode of communication, but not in the fact of communication, which communication was as specific in those which did not spread by contact as in those which did so spread.

Asiatic cholera, for instance, was easily shown to be a non-contagious disease, because in every epidemic of it, especially at the beginning, persons fell victims to it who were known not to have been near anyone sick with cholera, while those who themselves attended the sick, living, for example, on the banks of a stream, were not as often attacked as persons who lived at a distance down that stream. The next logical conclusion in this train of reasoning was that cholera had nothing to do with human intercourse any more than that ague has to do with human intercourse.

This seems to have been the opinion of the Medical Society of Massachusetts, when, in the year 1855, it promulgated with much emphasis, in a sort of pronunciamiento for the benefit of the public, the doctrine that Asiatic cholera was in no sense contagious, but rather that it was a miasmatic disease dependent upon some general element suspended in the atmosphere.

Ere long, however, the close and unmistakable relationship of the spread of cholera to the routes of commerce or of travel obliged many to admit that this disease had something to do with human intercourse. But if so, such a fact was conclusive against its being a miasmatic disease, for miasmatic diseases never leave their localities nor go on journeys. Hence, as cholera was neither contagious nor miasmatic, it was proposed

to call it "infectious." But this designation was equally unfortunate with contagious as a specifically descriptive term, though in an opposite fashion, for whereas "contagious" strictly limits the conception of the mode of extension to contact or personal proximity "infectious" defines nothing as to mode, for according to its original meaning it can be applied equally well to contagious, to purely miasmatic diseases, and also to the class which are neither miasmatic nor contagious, like typhoid fever and cholera. A man can be as truly infected with malaria by going to a malarious locality as he can become infected with smallpox by entering a room where a smallpox patient lies, and again, he can be likewise infected with typhoid fever and with cholera by going to a town where these diseases are epidemic. Therefore, to term cholera infectious only served to make the conception of its true nature more vague than ever.

Vague fear is the mother of panic, and vague terms are the most potent generators of vague fears. When medical men themselves are not sure how the different classes of epidemic diseases should be distinguished from each other by descriptive names, the public can scarcely know what to think about them, and hence is open to the occurrence of as needless a fright as that about cholera which cost the city of New York so much in the autumn of 1892.

This subject, moreover, has assumed of late quite a new phase and importance by the fact that the progress of medical knowledge has led us to add to the list of specific infectious diseases both tuberculosis and ague. But if the profession is to announce that pulmonary consumption is truly

infectious, the public has every right to ask just what we mean by it. Is infectious the same thing as contagious; and if not contagious, then what is it? We cannot minimize the importance of this matter, for without more specific explanation it will be impossible to prevent painful results in conduct toward consumptives, owing to the natural interpretation by ordinary persons of the term infectious as implying necessarily some form of contagion in this very general disease.

Moreover, it is to the immediate interest of the profession, as well as of the public, that the differences in the modes of infection between the various classes of infectious diseases should be clearly defined so as to prevent both disbelief in, and opposition to our recommendations as a profession about them. One of the chief obstacles to the diminution of tuberculosis either by precautions taken with consumptive patients, or by the sacrifice of tuberculosis cattle, will be the denial that consumption is an actively infectious disease, simply because common experience shows that it is by no means contagious. A general incredulity is already manifest in newspaper comments on this subject, which is based upon appeals to the infrequency with which consumptive husbands or wives communicate the disease to their life partners. We even see communications signed by physicians taking the same ground on the same argument, with appeal to the report of the Collective Investigation Committee of the British Medical Association of 1883, on this point, as disproving the communicability of consumption at all, and hence they inveigh against the inhumanity of the doctrine of the contagiousness of

phthisis, thus plainly supposing that the terms infectious and contagious are interchangeable.

Meantime it cannot be said that on account of the insufficiency of our knowledge we as a profession are still unable so to distinguish the chief characteristics of infective diseases that we cannot classify them accordingly. On the contrary, in no respect has our advance in late years been so distinct and gratifying as in the discovery of just how infective diseases are infectious, and often to arrest their spread by specific knowledge on that very point. There has not been, for example, in all history, such a striking illustration of the supreme advantage of definite scientific acquaintance with the *mode* of infection as in the case of the recent arrest, in the very act, so to speak, of Asiatic cholera at the great assemblage of pilgrims at its native habitat at the Kumbh Fair at Hardwar in India. As a conclusive illustration of our contention, we beg leave to cite the following extract about this case from a lecture delivered, February 14, 1894, by Dr. E. Klein, F.R.S., before the London Institution.

Dr. Klein says: "A well-known fact, which has received unfortunately a great many illustrations, is this, that pilgrims in India carry the contagium of cholera from the fairs or festivals to which the disease is brought from the endemic area to localities which were previously free from cholera." We may in passing note that even Dr. Klein speaks of the contagium of cholera, whereas cholera is in no proper sense a contagious disease. Need we wonder, then, that with medical authorities using such loose terms about infectious diseases, ordinary people will dread the contagiousness of chol-

era, tuberculosis, and typhoid fever? "One such fair," he continues, "is particularly notorious, and it has in the past always been a source of the greatest anxiety to the government of India. This is the great religious festival, or Kumbh Fair of Hardwar, a town on the Ganges, but situated outside the endemic area of cholera. This great Kumbh occurs once in twelve years, and is attended by a large number of pilgrims, a proportion of those coming from districts in which cholera is always endemic. It has thus frequently happened that this great concourse of pilgrims has been followed by a wide diffusion of the disease. The great Kumbh is principally a religious festival, and is looked upon by Hindoos as one of peculiar sanctity, and the very aim and object of the pilgrimage is to bathe in the sacred Ganges and to drink its holy waters. In 1891, when the last Kumbh Fair was held, 800,000 to 1,000,000 pilgrims assembled at Hardwar and to get an approximate pollution to which the sacred Ganges is subjected on this occasion, and the great risk from cholera to which those who drink of its waters are exposed. I will mention what Dr. Simpson, the able health officer of Calcutta, states: In describing the scene at the "sacred pool" at Hardwar, somewhat retired from the rest of the river, to bathe in which, and to drink whose waters the pilgrims gather in such multitudes, Dr. Simpson states that as the bathing went on the clear stream became a muddy one, that from April 8th to April 12th, there was always passing through the sacred waters "a seething mass of humanity" in constant motion through the pool at the rate of four to five hundred per minute. You can easily picture to your-

self that a few cases of cholera introduced into such a multitude would easily cause not only an outbreak of cholera there and then, but would, by the returning pilgrims, be carried far and wide. Thus a sanitary commissioner says of the Kumbh on previous occasions that very little remains on record, but that little is a record of disease and death. So grave was the outlook that the question of prohibiting the fair in April, 1891, was seriously discussed, and the official opinion of many government officials of great experience was that the most complete sanitary arrangements would be powerless to prevent the spread of cholera should the fair at Hardwar be allowed to take place.

But in 1891, armed with a knowledge of just how cholera infects, and that without its being taken in food or drink cholera cannot travel six inches, the British sanitary authorities grappled with the problem by allowing the fair to be held, and then stamped out the cholera every time it appeared in the midst of this Asiatic crowd, as effectually as a fire can be easily extinguished if taken just at its beginning.

Nor, with respect to other infective diseases besides cholera, is our knowledge less definite as to the ordinary modes by which they are propagated. We have now got rid utterly of that nightmare of a miasm, or deadly diffusible gas, which weighed upon the minds of medical men for so many generations whenever they thought of epidemic diseases, and enough is known for us now to tell the world both what infection means, and what the chief modes of infective propagation are, and hence, how to guard against them.

How readily this can be done I beg

leave to illustrate by submitting the following classification of infectious diseases, with the hope that it will serve to invite discussion on a subject of great public importance, namely, the adoption by the profession of a definite nomenclature descriptive of the various classes of infectious diseases.

This classification is as follows:

1. All diseases due to the presence of their specific living micro-organisms in the body, are "infectious," and hence this term should cover them all. Therefore, owing to their nature all infectious diseases are communicable from the sick to the well, but their ordinary modes of communication differ so that they can be classified accordingly, thus:

Communicable diseases are divisible into three classes.

1. The contagious.
2. The non-contagious.
3. The inoculable.

The contagious communicable diseases are those in which simple *proximity* to the infected with them is sufficient to communicate the infection to those susceptible to them. Examples of which are typhus fever, scarlet fever, smallpox, measles, diphtheria, mumps, whooping-cough, etc. The practical deduction from this fact is that isolation of the sick with them, therefore, is needful to prevent infection.

2. The non-contagious communicable diseases are those in which the communication is not by simple proximity to the sick, but through *intermediate means of communication*. Isolation of the sick with them, therefore, is neither needful nor effective, in comparison with measures directed against the intermediate means of the infection. Examples of these diseases

are—typhoid fever, Asiatic cholera and tuberculosis.

3. The inoculable diseases are those in which the infection has gained entrance through a wound, or damage, by inflammation or otherwise, of the skin or of a mucous membrane. Examples of these are surgical infection of wounds, erysipelas, hydrophobia and tetanus. To this class recent researches seem to make the great addition of what hitherto has been called the malarial infection, as it is claimed that *ague* has been experimentally transmitted to healthy persons by the bite of infected mosquitoes, analogous to the infection of cattle in Texas fever by the bites of ticks.

Lastly, all infectious diseases can be prevented by measure of disinfection applicable to each.

This statement of infectious diseases and of their respective classes, if correct, would have the advantage in my opinion of being intelligible to the most ordinary readers on account of its being free from all technical terms. In the first place, it is desirable, as it seems to me, that a clear conception of the ultimate cause of all infection should be generally entertained. When all infection is understood to be due to living micro-organism as its primary and essential element, all vague ideas of a relationship to poisonous chemical, physical, or atmospheric instrumentality will give place to more correct conceptions not only of what infection is, but also of what disinfection implies. The latter indeed is practically the most important of the two, for it is a familiar fact that people never do things so well as when they know why they should do them. The more thoroughly an enemy is known the more intelligently he is opposed, and when that enemy is

known to be a living, though invisible, thing, what will destroy its life is seen to be more useful than to endeavor to counteract its doings. Another reason for defining infectious diseases as always due in the first instance to micro-organisms, is that then it will be readily appreciated how their modes of propagation may vary widely according to the life history of each species, rather than by only the one mode of contagion. Again, with this conception of the nature of infection, it will not be difficult to demonstrate that some communicable diseases may be able to pass directly from one animal body to another, while others only indirectly, for so do seeds in all nature, even in the highest vegetable forms, present us with precisely analogous contrasts in the modes of their propagation. It has been asserted, for example, that but for the humble ground squirrel, hickory, oak, and chestnut trees would not be able to hold their own in our forests against the trees whose seeds can be carried by the wind.

The term communicable, seems to me particularly advisable because this term will then fasten in the mind the fact that no case of such disease has any other cause than by communication. This conviction, of course, does go with the word contagious, but it at once becomes very indefinite in all infectious affections where the term contagious is inapplicable because they can, and generally do, spread without any necessary proximity to the sick. Hence some designation is particularly needful which will always mean danger to others, even if there be no evidence of contagion, and the word communicable as we have defined it, does just that. Let a disease be known as communicable,

whether contagious or not, and attention is at once awakened to the need of preventing such communication. Nothing, indeed, would so powerfully enlist general co-operation with us toward abating tuberculosis for example, as to have every consumptive patient and his friends become assured that this distressing malady came to him, not *from* earth, air or water (though perhaps *by* all three), but came instead to him originally from another consumptive. But I do not know of any other term than communicable which will serve this purpose, for all other terms which have been employed imply more or less the idea of contagion. Now we should not ignore the instinctive recoil of most persons against the word contagion. In an acute disease like scarlet fever, its dread presence is borne as well as may, on account of the hope that ere long it will be past. But for a chronic affection like phthisis, acting like the slow blight of a withering curse, to have it also thought of as contagious is so repellant to patient and to friends alike that every objection to the belief in such a doctrine will be sure to have its effect upon the mind. But with the designation communicable, but not contagious, the loving ministry of friends need in no way be checked by dread of touching the stricken one, while at the same time the name gives an effective note of warning against its further repetition in other persons.

It is with the communicable but non-contagious diseases in fact, that a definite designating term is at present most needed to prevent ignorant fears on the one hand or ignorant carelessness on the other. It was a serious discredit to our profession, as well as to our civilization, that a pas-

senger steamer was dealt with as the "Normannia" was in 1892, when, notwithstanding the great object lesson which it gave that cholera is not a contagious disease, because not a single case of cholera occurred among its cabin passengers, though they were virtually nearer to it in an epidemic form among the steerage passengers than if they were all in a city tenement, yet no ship-load of smallpox patients could have been more summarily dealt with than they were. Meantime the absurdity of the usual methods of quarantine service in such a case was perfectly well known by us physicians. A single individual from that steerage crowd, with a slight choleraic diarrhea, might have passed up to the Harlem railroad as a laborer and there infected the water supply of New York city beyond the power of all the quarantine officials in the country to have remedied the mischief. But when confronting the New York State Senate Committee on Cities, I, as chairman of a committee sent from the New York Academy of Medicine to lay these facts before that remarkable body of legislators, found a state of mind and of intelligence in them on all questions about infectious diseases which one might expect from an equal number of Mohammedan muf-tis, and no more. In fact, the chairman of the committee in reply, enunciated the old orthodox Moslem doctrine that God was himself responsible for whatever should happen on the Croton water shed, as he sent the rain which washed things into the river!

Again, what a commentary upon our contemporary medical knowledge is the following instance related to me recently: A widely known and highly esteemed lady, resident in Princeton,

N. J., died in Chicago, from typhoid fever. Arrangements for the funeral had all be made at her home and prominent persons chosen as pallbearers, when the undertaker showed the husband a certificate that according to the laws of New Jersey public funerals were prohibited in the case of persons who had died of typhoid fever! In the case of tuberculosis the need of such a designating term as communicable is still more urgent as a warning against its most insidious ways of gaining an entrance. Thus a consumptive might not communicate the disease to anyone in his home, and yet so thoroughly infect his downtown office by constantly expectorating on its floor, that he would communicate the disease to any one who swept the floor, or even to another person who hired the same office after him.

Meantime, I would restrict the appellation "contagious" to those diseases which are so directly communicable from body to body that mere nearness to the infected is ordinarily sufficient to occasion the disease in others. That these particular diseases should have a term which would adequately suggest this element in them is very desirable, because there should be no doubt in their case of the immediate necessity for isolation. This question of isolation indeed, overrides all others when it is raised, for it always means inconvenience and hardship at least, if not cause for widespread alarm. I can see no objection to the old term contagious, if we use it in the sense ordinarily understood by the public, namely, a disease which may be contracted by going near one sick with it, without implying anything else about its mode of communication. In this sense the term has be-

come as settled in our language as any other English word, and on that account never can be displaced. It will always be used whether we medical men wish to retain it or not, while new words, however good, have to wait a long time ere it be known whether they will be allowed to become naturalized in a language or not. Moreover, the precise mode of communication has nothing to do with this term, or for that matter, with any other designation of infectious diseases, for with the majority of these affections we are still ignorant of the precise mode of their infection, and hence we would have to wait indefinitely if we would postpone classifying them until we could define them according to their specific ways of entering the body. What we do know about those diseases which seem to pass directly from body to body is that whether they pass in one way or another they do so commonly only at *short* distances, and that fact is enough to justify the choice of a term like contagious, which sufficiently expresses the danger of approaching the infected, while it also distinguishes them from the communicable but non-contagious diseases, in which the danger is as great, if not greater, at a distance than in the immediate neighborhood of the sick.

I have chosen the term inoculable to designate the third class of infectious diseases, mainly because of the familiarity of the public with this distinguishing fact in the mode of their entrance into the body. Antiseptic surgery has made both the idea and the conditions of such infections widely and correctly known, while the same may be said about the ordinary ways of infection by the virus of tetanus or of hydrophobia.

With reference to ague, however, the case is different, for here the public needs to be informed of our wonderful progress in late years in discoveries which already have had one effect at least, namely, to destroy altogether the idea of there being such a thing as malaria. This ancient conception of a bad air, or deadly miasm diffusing itself like a poisonous gas through the atmosphere, has dominated medical thought to an incalculable extent in the past, and by so much has hindered our efforts to rid the world of this widespread curse. Lavarán's demonstration that ague is due to the infection of the blood by a micro-organism was an epoch in the history of medicine whose importance we have scarcely yet fully recognized. In comparison with it the discovery of vaccination or of anesthetics are relatively inferior events, for it showed at once that as discrete living things can in no sense be gases, vapors or miasms, so there are no unhealthy places or climates as such anywhere in the world, but only infected places or climates, which therefore, medical science can find how to disinfect just as she can disinfect places where cholera, typhoid fever or the plague prevail. Having found our enemy, heretofore called malaria or bad air, as a living thing infecting the blood, the next step was to find how he got in. That he can get in by the bite of a definite species of mosquito, and that one infected mosquito can infect three healthy men by his hypodermic injection has already been experimentally proved, but much more than that is the further demonstration that one-half of the life history of this infecting micro-organism is passed in the body of the mosquito. Hence one

way by which it may be possible to exterminate this evil will be to prevent on the one hand all persons infected with ague from being bitten by these mosquitoes, in other words, then, to prevent them from infecting the mosquitoes, and on the other to destroy the mosquitoes themselves by killing them before they take wings, by proper disinfectants added to the water in which they spend the larval stage of their existence. Whether this mosquito bite is the only instrumentality of this infection has not yet been demonstrated, but enough has been proved already to warrant the hope that the greatest boon of scientific medicine so far is within sight in the form of a proper definition of what this dread infectious disease really is, and, therefore, that it can be disinfected out of existence.

In this classification it is carefully stated that it is based upon the ordinary methods of propagation among the respective classes. That the active agents of some communicable contagious diseases may be carried to a distance by various media, as scarlet fever has been asserted to have been conveyed by letter, or in milk, does not militate against the statement that the *usual* mode of communication is by proximity to the sick. All infectious diseases probably can be communicated in different ways, but the possibility of their spread by wholly exceptional methods, no more invalidates the designation of these diseases according to the normal modes of their increase, than it would be to object to certain plants being termed tropical because they are often found growing in greenhouses.

I have taken the liberty of bringing this subject before this State So-

ciety because it seems to me to be well within its province to take steps toward securing a uniformity in the nomenclature of the different classes of infectious diseases, such as would be justified by the present state of our knowledge on the subject, and which would greatly tend to the advantage both of the profession and of the public. Confusion on this subject of the different ways in which infectious diseases are propagated, has cost the world an incalculable amount of needless suffering, physical and mental, and waste of money, as well as entailed great discredit to our profession. What the public needs is some authoritative medical statement defining the different classes of the infectious diseases so that the public may know by that statement just what to fear and what not to fear about these diseases, and hence equally what to do and what not to do with them. Such a statement should be short, clear and in simple language, and for this purpose I would submit the following schedule, which need not occupy more than a single newspaper paragraph:

With each class should be given the list of diseases which comprise it.

1. All diseases caused by the presence of micro-organisms in the body are infectious, and therefore communicable in one of three ways.

1. Communicable directly as by simple proximity, and therefore contagious. Chief preventive, isolation.

2. Communicable not directly, but by carriers, not contagious. Chief prevention through dealing with the medium by which they are carried.

3. Communicable by inoculation. Chief prevention by dealing with the thing which inoculates.

CLINICAL ILLUSTRATIONS OF TACHYCARDIA AND IRRITABLE HEART.

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PAROXYSMAL cardiac over-action, tachycardia, or, popularly, "palpitation of the heart," is a clinical phenomenon which is by no means rare; indeed, in its less severe forms, at some time or another, it belongs to the personal experience of every individual and occurs at all periods of life. The rapidity of the heart-beats, as every one knows, is capable of being temporarily increased far above the normal rate by violent exercise, by reflex irritation, or by strong emotion. Thus, in childhood it occurs after running or skipping the rope; in later years, from rowing, dancing or athletic exercises, and at any age from indigestion, or even from purely psychic causes. Exceptionally, a death may result from so-called heart failure, but as the rule such attacks are of short duration and are not regarded as of much consequence. If, however, the paroxysms are found to recur frequently and they are excited by trivial causes, especially if they are prolonged and attended by disturbance of circulation, the condition constitutes a real disability and medical advice is apt to be sought on account of supposed heart disease. The condition now under consideration is to be distinguished from rapid action of the heart attending organic disease, and also from the rapid pulsation attendant upon fevers

and inflammations, or appearing as a symptom of exophthalmic goiter, hysteria, chorea, neurasthenia, or general debility. Tachycardia of the idiopathic or essential form is the result of disturbed nervous mechanism. The question in any given case, however, is not simply whether the vagus or the sympathetic is most at fault, because the movements of the heart are controlled by many causes, some of them, indeed, being quite obscure. Thus, J. Milner Fothergill refers to palpitation excited and maintained by a prolapsed uterus, and speaks of its disappearance on the restoration of the womb to its normal situation. He also mentions the case of a young man "in whom the cause of the palpitation was long sought for in vain, and at last rectal irritation was discovered. On appropriate treatment directed to the cause of the rectal irritation, the reflex palpitation passed away completely." Floating kidney has been instanced as one of the causes of palpitation of the heart, by Botkin of St. Petersburg in his work "*Les Maladies du Cœur*."¹

Both continence and free indulgence in sexual passion may give rise to palpitation, according to Fothergill, who also cites a case in which prostatic disease might have been the cause. Sup-

¹"The Heart and Its Diseases," second edition, 1897, p. 346.

posed functional disorder of the heart may in reality be symptomatic of toxemia, owing to the presence in the blood of substances produced by bacterial activity in the large and small intestine, or in the pharynx and nasal chambers, or by the presence of other poisons (tea, coffee, alcohol, etc.) in the blood. A certain unstable or irritable condition of the nervous system, somewhat analogous to hysteria, has been noticed in many cases. This may be due to neurotic ancestry, or it may be acquired as a result of over-indulgence in stimulants or narcotics, or it may appear in middle life as a result of the strain of modern civilization. As aptly said by Crichton Browne, "the battle of life is now no longer fought with thews and sinews as of yore; the brunt of it is now borne by the nervous system, and, as a natural consequence, disease and disturbance of the nervous system are increasingly frequent." Fothergill has called attention to the highly nervous temperament of the American people, and the fact that their nervous system is capable of being strained to a high degree of tension, as necessarily contributory to the production of what is known as "irritable heart." This term was first employed by Dr. J. M. Da Costa¹ to indicate a condition which he had especially observed among soldiers, and in which tachycardia was a prominent feature; it is a condition in which nervous irritability is blended with cardiac debility. In some cases the heart may be congenitally small. The influence of temperament must not be disregarded. According to Fothergill, "a cold-hearted, selfish man

is largely protected by his temperament from being affected with these nervous diseases of modern life."

Dr. H. C. Wood¹, in an address, entitled "Cardiac Nerve Storms," delivered some years ago, proposed the distinctive title, "Essential, Paroxysmal Tachycardia," in order to separate clearly these cases of rapid heart-action due to true cardiac nerve-storms from all other cases of palpitation, with the reservation that even paroxysmal tachycardia as thus defined may possibly represent two or more affections.

The following brief notes of a few cases from private practice will serve to illustrate the variety of causes, and, in some degree, the dissimilarity of therapeutic measures required for their relief. In none was there evidence of cardiac lesion and the assurance that the patient did not have heart disease was the earliest step taken in the treatment of each case, in order to enlist the therapeutic aid of expectant attention. It need scarcely be said that due attention was given to regulation of diet, to securing regular action of the bowels, to out-door exercise, bathing, clothing, and to securing uninterrupted sleep of seven or eight hours' duration at night, and in some patients half an hour additional rest in the early afternoon.

Case I.—Max F., 28 years of age, married, a sewing-machine operator; came to my office about 7 o'clock in the morning, May 18, 1899, with the statement that on the previous evening he had retired about 10 o'clock in his usual health, but had awakened at 3 o'clock with palpitation of the heart, without pain, but accompanied by a distressing sensation, which was somewhat relieved by getting up and walk-

¹ Medical Memoirs of the United States Sanitary Commission, 1867; *American Journal of the Medical Sciences*, 1871; third Toner lecture, Smithsonian Institution, Washington, 1874.

¹ "Cardiac Nerve Storms. Essential Tachycardia."—*University Medical Magazine*, Philadelphia, March, 1891.

ing about, and was made worse by lying down. He was a well-nourished man and apparently healthy. He smoked cigarettes, but not excessively, and used very little alcohol. He was below the average size, but broad-shouldered and of good muscular development. He had not eaten anything late at night nor drunk liquor before going to bed. He had walked some distance to get to my office. His face was very pale, some drops of perspiration were on his forehead, his pupils were dilated, eyes staring, temperature in the mouth of 96.2° ; extremities cool. Upon attempting to count his pulse I found it running between 240 and 250 beats in a minute, or twenty beats in five seconds. He answered questions deliberately and gave no evidence of extraordinary emotion. Visions of death in my office and a coroner's inquest flitted through my mind, and I immediately made him lie down and gave him a hypodermic injection of nitroglycerin ($\frac{1}{100}$), with an ounce of brandy by the mouth, and wrapped him up in a blanket. This was soon followed by strychnin sulphate (gr. $\frac{1}{60}$), and morphin sulphate (gr. $\frac{1}{4}$) hypodermically. In about fifteen minutes he said: "I am all right now," and on counting his pulse I found that it was only 80. His temperature was now 98° . As he had not taken any breakfast, I had him drink a cup of hot coffee before he left to go to his work, when he declared himself perfectly well. I obtained from him the following history: for five to six years he had suffered from chronic indigestion and constipation. For years he had spells of rapid action of the heart, coming on several times in the course of a year. These attacks at first were brief, lasting three or four minutes. Eight months ago he had had a severe attack which lasted two days. His last attack was three months ago. He never had headache. Appetite is generally good, but he is not a heavy eater. He was directed to take a tablet of nitroglycerin (gr. $\frac{1}{100}$) three times a day, and also to take a pill of aloin (gr. $\frac{1}{4}$), ext. belladonna alc. (gr. $\frac{1}{8}$), cascarn (gr. $\frac{1}{4}$), strychnin sulphate (gr. $\frac{1}{60}$), one after dinner and two at night until the bowels were regular. He returned one week later, and stated that he had worked steadily since last visit and felt well. The bowels were moved daily, sometimes with the aid of enemata. Upon examination of his chest it was found that

there were no cardiac murmurs, but that the percussion area extended half an inch beyond the nipple line. The pulse was 80 and of fair volume and strength. The treatment was now changed. As he was rather nervous, he was ordered asafetida (gr. liiss), ext. conii (gr. $\frac{1}{4}$), in capsule three times daily, with phosphate of soda night and morning. The following visit (June 3) he reported that he had no appetite and had sour stomach, but no flatulence; bowels constipated. He was told to resume the pills, two at night, and to take this mixture: \mathcal{R} Strychnin (gr. $\frac{1}{60}$), acid acetic q. s. ad solve., ess. pepsin \mathfrak{ss} after each meal. June 16 he reported that he has no constipation as long as he takes the pills, his appetite is good, pulse 84, and that he has had no return of the heart trouble. June 26 he reported himself perfectly well. I think that he has had no return of his tachycardia, or he would have immediately notified me of the fact, on account of the prompt relief experienced from the hypodermic injections.

Case II.—A. G., 26 years of age, a professional bicyclist, temporarily staying at a hotel in the neighborhood. This man came to my office at 2 o'clock in the morning, begging for immediate relief, in a state of great nervous excitement, apparently on the verge of insanity. He said that he had injured his heart in a century race about eight months previously, and that since then he had been subject to attacks of palpitation. His pulse was 160 at the time I saw him. He said that the attack had come on after going to bed, and that he could not stay in the house, but had felt obliged to go out into the street. His temperature was normal; his color good. There was no valvular lesion and the area of percussion dulness was only slightly increased toward the left. He received a hypodermic injection of morphin (gr. $\frac{1}{4}$), which brought the pulse down to 120, when he consented to go back to bed. His directions were to take 20 grains of potassium bromid every night and fluid extract of veratum viride, 2 drops three times daily for a week, or until the heart's action came down to normal, and to avoid severe, active exertion and stimulants. He did not return the following day, as directed, and I saw no more of him. In this case the strain of excessive bicycling had disturbed the nerve-balance of the heart, and had also led to a certain

amount of hypertrophy with commencing dilatation.

Case III.—M. M., an Italian cook in a hotel, about 32 years of age, married. He was in good health and presented no evidence of disorder except that his pulse was constantly over 140, and when I saw him was 160. His digestion was good, he was not constipated, and no cause could be assigned for the tachycardia except that he acknowledged that he smoked about thirty cigars a day. He was directed to reduce this allowance to three cigars daily, and was ordered tincture of strophanthus fifteen drops, three times daily, reduced to ten when pulse got below 100. He was directed to take a warm bath at night and to change his clothing so as to favor elimination. He reported in a week that he was well; his pulse was 90.

Case IV.—Mrs. G., living in the country, a stout woman 48 years of age, had a paroxysmal, barking cough, occurring at nearly regular intervals of less than a minute. She came to my office Dec. 16, 1897. She said that her general health was good, but she had no appetite and was constipated. About ten weeks previously she had lost a son 25 years of age by consumption, and had lost much rest waiting upon him; she was much affected by his death. Her pulse was 120, and a little excitement sent it up to 140. She also suffered with headache. In this case the cough was the principal symptom for which she sought medical advice. Upon examination a reflex cause was found in the nose. Cauterization of the hyperesthetic area on the hypertrophied turbinal, with the aid of a few doses of potassium and sodium bromid, relieved the headache and the cough. She was then given tonics, with directions as to daily cold sponging and exercise in the open air, and directed to take as, required, a laxative at night (tr. belladonnæ Mx. res. podophylli, gr. $\frac{1}{4}$, syr. senna 3 i.). Under this treatment the general health improved, and the pulse came down to normal.

In the next case we have an illustration of the influence of a neurotic and gouty ancestry in producing neurasthenia and frequent attacks of migraine during childhood. When the attacks of tachycardia began

they took the place of the sick headache, which seems to give confirmation to the cardiac nerve-storm theory of causation in this case, the nerve-storm apparently changing its form from migraine to palpitation of the heart:

Case V.—A. B., 50 years of age, sparely built but fairly well-nourished, of sedentary habit, and in circumstances which permit him to devote himself largely to the care of his health. He has never practised his profession, which is that of a physician. Uses tobacco in moderation, and stimulants to a very slight degree. Fifteen years ago he contracted the morphine habit, and uses, at the present time, from three to five grains daily hypodermically. His father suffered for years with irregular gout, from which he died. His mother, coming from a family in which paralysis was common, was a nervous invalid and was partially paralyzed for many years, and finally died of hemorrhage. A. B. was apparently stillborn, after a protracted labor, and was only revived after prolonged artificial respiration. He has been rather delicate all his life, his headaches interfering greatly with his attendance upon school. His skin is hyperesthetic, and he is so sensitive that he can scarcely bear physical examination of his chest, "it tickles him so." In 1890 he was circumcised, at his own suggestion, in the hope of overcoming excessive genital hyperesthesia and frequent nocturnal emissions, but the operation did him no good. He has on several occasions stopped taking morphine for several months at a time, and then resumed it because he feels more comfortable while using it. The genital hyperesthesia and emissions, he is practically free from when taking the drug, but they always recur when he breaks the habit. He has had three illnesses of typhoid, or typhoid and malarial, character, the last of which was twenty-five years ago, recovery from which was slow, and he thinks that his powers of assimilation were injured at that time. He has never married nor had sexual intercourse. In 1889 he met with an accident, injuring his right ankle so that the taking of regular exercise is much interfered with; he is not lame, but the ankle gives out soon when walking. He is quite sensitive to changes in the weather, cold days making him nervous and de-

pressed, and he always feels poorly in warm weather with high humidity for a time. He had an attack of grippe in 1890, which was followed by intermittent pulse. He had his first seizure of rapid and feeble heart action in 1894; it was accompanied by dyspnea and great anxiety, and lasted for several days. It came on in the afternoon, when he had not been subjected to any excitement, and knew of no occasion for it. Following this, he had recurrences at irregular periods, coming on while straining at stool, or upon hearing sudden noises, or from any slight excitement, or, indeed, without any apparent cause. He has always been of constipated habit, and this is more marked when taking the morphine; but he never takes heroic doses of medicine, a quarter of a grain of aloin, or a small piece of blue mass, perhaps half a grain, at night, is quite sufficient to produce evacuation of the bowels in the morning.

The above account is taken from a letter, which he wrote by request, giving his medical history. In a subsequent letter he says: "After being out yesterday my heart trouble reappeared on eating some ice-cream." This illustrates one feature of the case, that the attacks come on without premonition and apparently without cause. There is no regularity about their occurrence. He may have two in a month or be free for six months. His normal pulse is 80, but during the attacks it is 160 or more. The heart-beats may continue at this rate for days, or weeks, or for (as on one occasion) two months, during which period he is apparently as well as when his heart is normal, although he remains in bed in a semi-recumbent posture as a measure of precaution. He no longer experiences any pain or dyspnea, as at first, and it is startling to find him apparently in good health and yet with a pulse double his normal rate. When the rate is higher, 180 or more, there are occasionally imperfect ventricular contractions and apparent intermittency of the radial pulse; at other times there is a partial suppression of every second beat, so that with the finger on the pulse, the inference is gained that the rate is not above normal, while the ear applied to the chest demonstrates that the convulsive over-action of the heart continues. While the ordinary attendant symptoms of palpitation are absent, there is one from which he suffers, and that is insomnia, which grain doses of morphin sulphate hypoder-

mically have no power whatever to overcome. We have found by experiment that 5 grains of bromid of potassium, taken every fifteen minutes, will produce sleep, lasting for several hours, after four or five doses have been taken.

For the treatment of the paroxysmal tachycardia, after using convallaria, spartein sulphate, and several of the coal-tar compounds, we finally discovered that the infusion of digitalis, made extemporaneously from selected leaves, was the most reliable drug. The strength of the Pharmacopœia was adopted, but the leaf was infused with plain boiled water, straining it when cold. Of this infusion four ounces were usually made up at one time, and of this a tablespoonful was given every three or four hours. Generally, on the second or third day, the pulse would drop to the normal, going back as suddenly as it went up, just as if the heart had a double rate, and slipped from one gear to another. The patient, however, complains that the digitalis infusion is rather nauseating, and objects to it because it took away his appetite, although by rinsing his mouth with brandy before and after taking the infusion he succeeded in getting it down. At one time, at my suggestion, he used it by rectal injection every four hours, and found that it accomplished the purpose equally well; but he could not be induced to repeat it, because of the great hyperæsthesia of the parts and his dislike to this method of medication. As he is generally quite comfortable, he has, to a large extent, learned to disregard or to accommodate himself to the avian pulse-rate, and he remains in bed occupied with reading, and does not resort to the digitalis infusion until a necessity arises for him to go out of the house on business, when a few doses of digitalis are sufficient to reduce his heart to a business basis, where it remains until he strains at stool, or is startled by the shutter violently closed by the wind, or something else, when his heart again starts off in the upper register, or the higher gear. Occasionally chloroform has been administered while the heart was excited, but although he has been kept partially under the influence for hours at a time it has had no effect whatever upon the rapidity of the heart's action, but only has lowered the blood tension and made the pulse weaker. His temperature is constantly half a degree or a degree below normal. Repeated examination of his heart reveals no abnormality.

TRAUMATIC VENTRAL-HERNIA, EVENTRATIONS AND VAGINAL HYSTERECTOMY-HERNIA.

BY THOMAS H. MANLEY, M.D.,
New York.

IN recent years, since celiotomies and vaginal incisions have so greatly multiplied, the number of post-operative herniæ has been considerably augmented. No doubt, however, that of late, since needless or excessive drainage for non-septic conditions has been discarded within the abdomen, and more attention has been given to the separate and homologous approximation of the divided structures, one type of this unfortunate sequela is less frequent for the proportionate number of operations than formerly.

It is nevertheless common enough to constitute one of the most formidable objections to abdominal section.

There are no published statistics which will enable me to state whether these post-operative abdominal eventrations are more liable to occur in the female than the male sex.

My experience has been that they more frequently succeed in lateral than median sections through the peritoneum, and those below the umbilicus than above it. In my own celiotomies for traumatic and pathologic states those extrusions have been much more numerous in the male than the female.

I am unable also to find the published experience of any author on the influence of pregnancy or parturition as determining factors in the evolution of this hernia.

A young, pregnant female came to

me for advice in the spring of 1898, who had a large eventration following an appendicitis, and as she was nearing her time for delivery her family physician was apprehensive as to the effects of labor.

She has since been delivered safely, and I am informed that the mass underwent no further augmentation, but, on the contrary, has greatly reduced in volume.

In aggravated cases of this description, under ordinary circumstances, the indications for operative relief are clear enough; but to operate during any stage of pregnancy is not justified, especially as we know they never become strangulated; besides, the shock of interference with the lethal action of the anesthetic is quite certain later to imperil the mother's life by a premature expulsion of the fetus.

Traumatic herniæ probably may be considerably reduced in number by proper prophylactic expedients. The extent of the incision is evidently of no special consequence as a causative factor, provided effective coaptation of the divided parts is secured. When drainage must be utilized, with resorption and thinning of the resulting scar, yielding is quite inevitable. But no matter how long we may enforce recumbency, or how perfect the line of union may be, it should never be forgotten that the muscular resistance of the abdomen is permanently impaired;

hence the patient should be directed to wear some description of circular, supporting girth throughout life.

Bland Sutton speaks of these herniæ as being "sometimes the cause of more trouble than the disease for which the operation was performed, and besides are a danger to life." This may seem rather strong language, though it undoubtedly is abundantly supported by facts. As an illustration, we might cite those instances in which a hernia is produced, though an incision made in the abdominal wall, in an effort made to cure another hernia, or a hernial condition; as when one penetrates through the abdominal walls to "anchor" a sinking uterus, and a hernia follows through the yielding scar, vastly more troublesome than the ante- or retroflexed fundus uteri.

Dr. Brettauer, of New York, reported ten very troublesome, traumatic eventrations, succeeding Alexander's operation, and states it as his belief, that the sequelæ were much more painful than the condition for which operation was done.

All this should certainly not weigh when serious intra-abdominal conditions call for operative treatment, though it goes to support the position of the noted London surgeon.

VAGINAL HERNIA CONSECUTIVE TO HYSTERECTOMY.

From an equally distinguished authority comes a note of warning on those grave, herniated conditions so liable to follow vaginal hysterectomy.

Dr. H. J. Garrigues, in a recent able contribution on the subject of "Fashions in Gynecology," calls to our notice the tendency to vaginal eventration after hysterectomies by the vulvar route; a most deplorable state, for

which we can promise little or no succor.

Cittadina, of Brussels, in a late brochure—*De L'occlusion intestinale Vraie Aigñe Consécutive à la hysterectomie-vaginale*—declares that "acute intestinal occlusion is a relatively frequent and redoubtable complication after vaginal hysterectomy; hence, why after this operation, when symptoms of obstruction occur, it is important not to confound it with ileus, which may result from infection.

When the intestine is caught in the contracting incision through the vaginal vault it may sustain so much damage as to render an enterostomy imperative."

This would show that besides displacement, stenotic obstruction and strangulation may occur in this type of concealed eventrations.

In young subjects of good muscle the mesentery may so lift up the intestine as to so obviate the tendency to this; but after vaginal hysterectomy in wasted, anemic, elderly women, the descent of the intestine, through the open or feebly united gap is very liable to occur. In any event, the delivery of the internal generative organs by this passage is very prone to be followed by *herniated* conditions, the displacement, torsion, or compression of the intestine in the resulting cicatrix as stated by Cittadini.

This is the most deplorable of all phases of hernia, because by no means within our reach can we entirely control it; the underlying firm support being sundered, the uterus is gone, and the tendency of gravitation and intra-peritoneal pressure is to aggravate and complicate a condition which must remain.

To the woman who has her conjugal duties to fulfil this state is an abomina-

tion; as besides her desexualized state and the perverted moral nature following, now a physical impediment is in the way.

Since Pean's essay in 1890 gave such an impetus to this new mode for clearing away inflammatory or neoplastic elements in the pelvis, the number of hysterectomies performed by the vaginal passage has been enormous.

HERNIA THROUGH THE PELVIC PASSAGES; HERNIAL CONDITIONS.

The therapy of varying degrees of visceral ectopia, involving the contents of the pelvis and presenting in the vaginal passage, constitutes the greater part of every gynecologist's practice, exclusive of inflammatory lesions.

The large cleft at the base of the trunk, stretching quite the whole length of the anterioposterior plane of the floor of the pelvis from the pubic bone to the coccyx, must inevitably favor visceral displacement in the human being who takes the vertical attitude. The integrity of this hiatus and the normal position of the pelvic organs depend quite entirely on muscular support.

This is subject first to the disorganizing influence of violence in labor, and second, the pathologic degenerative changes of atrophic or senile character witnessed in advancing age. When

the organs of the pelvis gravitate into, or through the vagina, it is said that they are flexed, displaced, or prolapsed, or that there is procidentia when the rectum, the bladder, the ovary, or the uterus alone or together may make a descent, they being crowded down by the sinking viscera from above.

The essential etiologic factors which enter into these conditions are quite identical with true hernia, contractile supporting structures have torn, wasted, or stretched, resistance has given away and their displacement follows.

Unlike in true hernia, however, the displaced viscera here are rarely strangulated, although they occasion much disturbance of function and are a source of great distress when present in an exaggerated degree; with hernia their therapy of late years has undergone many radical changes.

Twenty-five years ago they were all trussed up by pessaries and other mechanic devices, but of late they have been attacked from within the cavity of the peritoneum in the vulva and vagina by plastic surgery mainly.

In certain individuals with lax or wasted muscle-fiber, here, as with hernia elsewhere, radical surgery can promise unsatisfactory permanent results. It would probably be no exaggeration to say that one in every ten women who have borne children suffers from this type of visceral ectopia.

THE SURGICAL TREATMENT OF GONORRHEAL ARTHRITIS.

(John O'Connor, M.D., Dub. *The London Lancet*, Dec. 1899.)

The author has practised arthotomy with irrigation and drainage in all his cases since 1897, and his results confirm his opinions expressed in the *Glasgow Medical Journal* for 1897 and also the *Annals of Surgery*, 1898. The author advises early operation

in these cases to save the joint structure from a prolonged emersion in the destructive exudation. The results have certainly been satisfactory and he has had no incidents of sepsis nor had he had a relapse. He reports nine cases cured and discharged with a joint normal in contour and function, and the tenth case markedly improved, still under treatment.—*Rogers, St. Paul Medical Journal*.

NEW BOOKS.

A TEXT-BOOK OF DISEASES OF THE NOSE AND THROAT. By D. BRADEN KYLE, M.D., Clinical Professor of Laryngology and Rhinology in Jefferson Medical College; Consulting Laryngologist, Rhinologist, and Otologist at St. Agnes' Hospital, etc., etc. 8vo., pp. 646. With 175 illustrations; 23 in colors. Philadelphia: W. B. Saunders. 1899.

Of the numerous text-books of diseases of the nose and throat by American authors that have been published in recent years, none bears the stamp of the author's individuality more plainly than Dr. Kyle's recent book. Of convenient size, clear print, and free illustration, casual inspection predisposes in its favor. Examination of its contents shows that it is a contribution to the literature of the subject and not a mere compend. The author's broad pathological knowledge is used to good advantage in his descriptions of the many local manifestations of general pathological conditions that so often confront the laryngologist. Clear analogies are made between certain pathological conditions within the nose and similar conditions found in organs more accessible for post-mortem study and comparison. Cuts of original or well selected drawings accompany the text in many places and reproductions of microscopic sections illustrate clearly the pathological anatomy of various tumors and diseases. Indeed, the care and complete-

ness with which the pathology of the diseases under consideration is stated, constitute the chief value and originality of this work. This important preliminary to sound and clear therapeutic reasoning is so noticeably lacking in many of the text-books of laryngology presented to the medical profession that Dr. Kyle makes good a claim for a wide reception of his book by the attention he has given to it.

The arrangement of the subjects is somewhat original, and is based on pathological as well as anatomical considerations. This entails occasional repetition, but it makes clear the pathology and associated lesions as is not done by a more conventional arrangement. The analyzing captions of chapters are excellent, and enable the student readily to classify the information obtained therein. The style and language of the author are not always so good and clear as they should be to convey the thoughtful ideas they embody. At times the descriptions of symptoms and of operative procedures are too compact and brief for clearness. The mind already trained to think in rhinological channels can supply the missing details, but the beginner not so easily.

The chapter on pathological conditions of mucous membrane is excellent, though the need for condensation and the author's familiarity with the principles enunciated have led him at times to take for granted a familiarity

with the subject on the part of his reader that is not always warranted. The treatment of simple acute rhinitis is given with much detail, and is based on good pathological deductions. The topical treatment recommended throughout the book is rational and conservative. For the production of ischæmia of the nasal mucosa in the early stages of coryza, no mention is made of the local use of supra-renal capsule. Nice distinctions are made between the different types of chronic rhinitis, with clear statements of the pathological sequence of their development, both locally and generally. The explanation of their relations to the general circulation and health is sound and very suggestive of the requisite general management of these cases. The plates from the author's specimens show beautifully the pathological anatomy of the nasal mucosa and illustrate well the relations and differences between the various types described. The pathology of atrophic rhinitis is given with clearness and detail, and the classification based on causal relations is rational and helpful to a better understanding of this intractable affection. In the treatment of the various forms of chronic rhinitis the free use of the galvano-cautery is not recommended, and this conservatism agrees with accepted views. In true hyperplastic forms, however, it is of more use and necessity than the author's statements would lead one to believe. The hint that the results of treatment of chronic rhinitis, especially of the intumescent type, may not be successful or satisfactory, is one for students to heed; too often the implication is made in text-books that treatment of these cases is habitually successful.

The general pathology of syphilis is

admirably and succinctly given, and the directions for treatment are explicit. Special stress is laid on the necessity for treatment for at least eighteen months after the last active manifestation of the disease. The grouping in one chapter of the various types of ulceration occurring in the upper air-tract is of distinct advantage to the student. The author's conservative attitude on the question of nasal reflexes, about which so many untenable statements have been made, is well shown by his comment on the causes of asthma,—“in a search for the underlying cause of the bronchial spasm, eliminate cardiac trouble, renal disease, malarial influence, gastric and intestinal disturbances, irritation of the cervical sympathetic by enlarged glands and growths, chronic bronchitis, skin-lesions, sexual irritation, rheumatism, gout, and psychical causes, *then examine the nose.*” Perhaps he underestimates the relative importance of the nose in this category, but the results of treatment confirm the need of great care in claiming for the nose too great a causal influence in asthma or even in hay-fever.

The chapter on neoplasms of the respiratory tract is excellent and scientific. The feature of considering these tumors by type rather than by anatomical location is commendable. Dr. Kyle's reiterated statement that benign growths may become malignant under irritating influences entails important conclusions as to the unadvisedness of irritating or “nagging” treatment of new growths in any location. No definite statement is made of the advisability of extirpation of the larynx in malignant disease, nor of the pitiful condition of those who have survived the operation. In the choice between palliative and euthanasic measures and

the radical operation, the subsequent condition of the patient, even if the operation be successful, should be considered by the conscientious adviser and be made clear to the patient. In the treatment of nasal polyps, the removal of portions of the middle turbinated bone and opening and curetting of the ethmoid cells to prevent recurrence, are not mentioned with the emphasis that their importance requires. Indeed, in the description of many of the surgical procedures mentioned throughout the work the author fails of that clearness of statement and minuteness of detail that are desirable. The book is stronger in its pathology and topical treatment than in its surgery. It is perhaps to warn against carelessness that Dr. Kyle so frequently expresses fear of scars from cautery operations on the turbinates or from cutting operations on the septum. Certainly the experience of those who use either the knife or cautery conservatively does not warrant the consideration of these scars as of very serious moment. In practice it is extremely difficult to dissect up the mucous membrane in any degree, as he illustrates on page 260. If the wound do not involve the tissues of the mucocutaneous juncture any serious annoyance from the cicatrized wound very rarely occurs.

The chapter on diseases of the septum is complete and interesting, and various methods of treating deformities of the septum besides the author's are set forth clearly and fairly. None of them seems more simple than Asoh's operation, the results of which in experienced hands have been excellent. No mention is made of the frequency with which the nasal obstruction in septal deflection is due largely to the accompanying thickening of the

convex side. In the majority of cases a sufficiently patulous nasal chamber can be secured by the removal of this redundancy without resorting to the operation for deflected septum, so much more formidable from the patient's point of view. The statement so frequently made and reasserted by the author that deformities of the superior maxillary bones are induced by mouth-breathing is one in which the arguments are "not proven." That both the maxillary irregularity and the obstructive deformity are due to an underlying common cause, such as a rachitic tendency, seems a more reasonable conclusion.

The important topic of diseases of the accessory sinuses of the nose has extended consideration. It is illustrated by cuts of well-chosen sections of the head, some of them original. The pathology and symptoms of the various diseases are well described. The author's conservative estimate of the value of transillumination in diagnosis is sound, but we must take issue with his statement that "transillumination of the frontal sinuses * * * owing to their location is of very little positive aid." Frontal transillumination is of decided value as an aid in diagnosis of empyema of the frontal sinus, though the various modifying influences alluded to by the author must of course have due regard. The surgical treatment of chronic sinusitis as described by the author has an academic rather than a practical character; his description of the operations is indefinite and unsatisfactory. He makes no mention of the method of Luc in the operation for antral empyema, though the immediate closure of the gingivo-labial wound and the subsequent drainage and treatment through the nasal wall beneath the in-

ferior turbinate have been found very satisfactory in their results. The remarks on related pathological conditions of the nose and eye are as definite as the rather vague and limited clinical data permit. No mention is made of asthenopia consequent to obstructive nasal lesions.

The pathology of hypertrophied faucial tonsils is well considered and illustrated. We cannot agree with the author when, in speaking of the hypertrophied pharyngeal tonsil, he says: "The effect of impaired respiration due to post-nasal obstruction is also manifested in an ill-formed superior maxillary arch, with marked irregularity in the arrangement of the teeth. This irregular development is largely caused by the repeated contraction of the muscles controlling the nasal orifices, necessitated by the forced nasal inspiration and snuffing. By this drawing down of the facial muscles, the upper jaw is retracted, and the contour of the upper arch is altered. The hard palate, then, instead of forming a perfect dome, has its anterior portion tilted out and its upper portion, at the base of the nose, drawn in. Without this interference the pressure of air within the natural passage counterbalances that upon the external surface, and normal development takes place. This, of course, will occur only when the obstruction takes place in early life, before the bones are firmly united. This irregularity in the arch will produce unevenness in the development of the teeth, causing their irruption high up in the alveolar process, or, if placed in the arch, they will be crowded and irregular. If the irruption occurs high up, it will add to the protrusion of the upper lip, increasing the facial deformity so characteristic of adenoid obstructions." In the next

sentence the inconsistent, though we think the more correct, statement is made,—“inherited tendency to adenoids is often, in reality, the inherited family nose, children with the narrow, slit-like orifice being more prone to thickening of the adenoid structure than those having a wide-open nostril.” Only a minority of children suffering from adenoids have deformity of the hard palate, and the easy explanation that where the deformity is present it is a result of the mouth breathing, we think unsatisfactory and without sufficient data to warrant it, though it is repeated in almost every text-book. We are surprised to find how little stress Dr. Kyle lays upon the causal relations between naso-pharyngeal disease, especially adenoid hypertrophy, and disease of the middle ear. It is highly important to impress students of medicine with the great frequency with which disease of this region is not only accompanied by acute manifestations of ear disease, but is followed later in life by intractable “catarrhal deafness.” This is, indeed, one of the most imperative reasons for early and radical treatment of hypertrophy of the pharyngeal tonsil. An important distinction is made between temporary engorgement of the pharyngeal tonsil and true hypertrophy; the one amenable to local and general medication, the other only to operative interference. No mention is made of the special dangers of chloroform anesthesia in the adenoid operation, though the English medical journals of the last five or six years have contained numerous reports of death from this anesthetic in these cases. The treatment of tonsillar and peri-tonsillar abscess is dismissed unsatisfactorily in a few lines. In a work “prepared for the student and the general practition-

er" this trying and sometimes serious disease should have the most approved methods of treatment, and especially of prophylaxis, carefully detailed. The local use of guaiacol early in the attack is not mentioned, nor applications by inunction or spray of Crede's soluble silver—both measures that are of service. Nor are the indications for, nor methods of, the application of heat and cold, stated; in a word, clearness and thoroughness have been sacrificed to brevity.

The chapter giving Dr. Keen's method of operation for thyrotomy and laryngectomy is a valuable addition to the work. We can recommend heartily Dr. Kyle's book to all medical men interested in the subject, feeling sure they will find in it many things supplemental to other text-books and their own experience.

FRANK WHITEHILL HINKEL.

TREATMENT OF PELVIC INFLAMMATIONS THROUGH THE VAGINA. By William H. Pryor, M.D., Professor of Gynecology, New York Polyclinic; Consulting Surgeon City (Charity) Hospital, etc. 12 mo., pp. 248. With 110 illustrations. Philadelphia: W. B. Saunders, 1899.

This book represents the ultra school of vaginal route operators. Viewed from the standpoint of the followers of that method it must be regarded as a valuable contribution to gynecological literature. The author is a conspicuous exponent of the school referred to, and it must be confessed that he has made much of his opportunity.

He begins with a chapter on endometritis, which is an excellent exposition of the disease and is considered

from the various etiological viewpoints—sepsis, gonorrhea, puerperal infection and tuberculosis. Chapters on pelvic inflammation, salpingitis, pelvic and tubercular peritonitis follow in their order, and then inflammatory diseases of the ovaries are considered. Pryor devotes a chapter to each of the following conditions: Broad-ligament cysts, adherent retropositions, broad-ligament abscess, and diffuse pelvic suppuration.

The author then proceeds to the consideration of the surgical aspect of his topic, beginning with a chapter (?), less than 100 words, on the anesthetic. Curettage is then taken up, and is well described. Pryor uses the sharp instrument of Sims for this operation. In the next chapter exploratory vaginal section is presented. The operation is first described and then its purposes are detailed. It is contrasted with abdominal section and anterior colpotomy. Pryor says, p. 144, "All cavity operations are in their first stages exploratory, and my operation occupies that position with regard to future work." Again he writes, p. 145, "To sum up, abdominal section and anterior colpotomy inflict needless traumatism, furnish no drainage space, and are most complicated in every way; while my operation requires a special table and instruments to be simply and easily done, and with ample drainage space for all discharges." These excerpts will convey an idea of the author's style and indicate the importance he attaches to his methods and to his operation.

The author next devotes a number of pages to the consideration of conservative treatment, and argues that his method is highly conservative, while that of the abdominal operators is distinctly radical. We state the

mere fact without any disposition to enter into controversial argument, our purpose being simply to afford the reader an idea of the book and what it teaches.

Forty or more pages are taken up with vaginal ablation, in which the author's method is elaborately described and profusely illustrated. Much of the text is padded with comparisons between the vaginal and abdominal routes, the aim of the writer evidently being to convince his readers that his way is the best, or to make converts to the vaginal method. All the old arguments are reproduced, all the old straw is rethreshed, and yet there are left the same old two opinions which have existed, and which undoubtedly will continue to exist.

That there are some—a limited number of—cases to which the vaginal route in operating is best adapted, and that there are other some—a large number—of cases to which abdominal number of—cases to which abdominal fact, and no doubt will ever remain so. No one method is suited to every condition, and the best equipped surgeon is the one of sufficient resource to rise to the occasion when presented, and change the plan when circumstances arise to demand it.

This book is a personal one, a monograph in which the personal equation predominates. It will be read by every gynecological surgeon with interest and profit. It may not always convince, but it will benefit, for it is an honest and capable presentation of the subject with which it deals from the author's viewpoint.

WILLIAM WARREN POTTER.

Optics, Retinoscopy, the Fitting of Spectacles and Eye-Glasses, etc. By James Thorington, A.M., M.D., Adjunct Professor of Ophthalmology in the Philadelphia Polyclinic and College for Graduates in Medicine; Assistant Surgeon at Wills' Eye Hospital; Associate Member of the American Ophthalmological Society; Ophthalmologist to the Elwyn and the Vineland Training Schools for Feeble-Minded Children, etc., etc. Two hundred illustrations, thirteen of which are colored. Octavo, pp. 301. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut street.

A work on refraction should be welcomed by the ophthalmologists. Those who have traveled from Dan to Bersheba to attend a section of ophthalmology, only to find the valuable time taken up with papers on rare tumors, amaurosis of an unusual type and the apparent elimination of anything of direct practical bearing, will appreciate a work on refraction by a man who is willing to give us the benefit of his experience in what comprises over eighty per cent. of our work. When such a large proportion of office work is refraction it is surprising how rarely it is discussed at any meeting devoted to the interests of this particular specialty. The wide difference in diagnosis is shown in the combinations of lenses prescribed for the same patient by different oculists, the prescriptions sometimes varying two or three dioptrics. More open discussion on refraction in meetings would lead to a better understanding of the subject and all would be benefited and the science of refraction materially advanced. When the journals refer in any way to refraction it is generally a long-winded proposition to wipe the earth with the opti-

THORINGTON. REFRACTION AND HOW TO REFRACT. Including Sections on

cian or a tilt at the refractionist who does not always use a mydriatic. Some of this space could be utilized to advantage in clearing up knotty points in refraction, and the result would hasten a harmonious condition to replace the present chaos produced by many men of many minds.

The effort on the part of the author of this work has evidently been to review the subject of refraction in a brief but thorough manner. While it is presumably intended for the student, it may be read with profit by the most advanced ophthalmologist of the day, as it includes points here and there of great value not found in any other text-book on refraction. The brief way in which the topics are discussed is marked throughout the book. This is a valuable feature, the only objection being the sacrifice of certain explanatory paragraphs, which would specially add to the value of the author's rules without materially increasing the bulk of the volume.

After definitions of various rays, reflections from mirrors, etc., the refraction of flint, crown and plate-glass is illustrated, which is rarely found in any text-book; the same may be said of prisms, the old and latest method of numbering and neutralization. The usual variety of lenses is shown, with excellent illustrations, and Thorington's laws regarding the action and the general description of cylinders are good.

Excellent suggestions, including instruction how to find the optical center of different lenses and directions for neutralizing them are given. The standard eye is discussed, showing the latest test cards, with careful and concise instruction about testing the visual acuity, near-point and range of accommodation.

The diagnoses of emmetropia, hyperopia and myopia, together with the theoretical and mechanical causes of myopia are given with clearness and brevity. Astigmatism is well defined and includes many varieties not found in the text-books. Sixteen tests for the diagnosis of astigmatism are given and they are all excellent.

Thorington's advocacy of retinoscopy is well known, and the chapter on the subject is very complete and fully illustrated.

Muscular insufficiencies are well written up, but it is to be regretted that more was not said about the treatment of these conditions. The author takes no stock in partial tenotomies and only advises cutting the muscle as a last resort.

Various mydriatics are considered; if any is used he prefers atropia. Clonic and tonic spasm of the ciliary muscle will be found new, we think, to many. The divisions of asthenopia is original evidently; his term of retinal asthenopia for a transitory hysterical condition seems absurd.

How to refract and applied refraction is thorough in detail. Every man has his hobby, and the cobalt-blue test seems to be Thorington's, although he does not place much reliance upon it.

More might be said with advantage about exceptions to the rules the author lays down for determining the correct glass in presbyopia.

Under the title, "Spectacles and Eye-Glass Frames," instructions are given so that the surgeon may make the measurements himself. For the purpose of measuring, steel frames, having the P. D. height of bridge, etc., marked on the lenses, are furnished by any wholesale optician; this is much simpler than the lead wire and rule that he depends upon. The sug-

gestion to make the measurements is a decided innovation and a step in the right direction, for even if the oculist does not care to get the glasses himself he should at least know that the frames are adjusted properly. We venture to say that seventy-five per cent. of the ophthalmologists do not know when a frame fits correctly or when a lens is properly centered. No wonder the optician so often does inferior work with rarely any intelligent criticism offered by the one who should be thoroughly posted in the matter. This book will prove of great value in giving instruction on this point.

RICHARD H. SATTERLEE.

AN AMERICAN TEXT-BOOK OF SURGERY. For Practitioners and Students. By Phineas S. Conner, M.D., Frederic S. Dennis, M.D., William W. Keen, M.D., Charles B. Nancrede, M.D., Roswell Park, M.D., Lewis S. Pilcher, M.D., Nicholas Senn, M.D., Francis J. Shepherd, M.D., Lewis A. Stimson, M.D., J. Collins Warren, M.D., and J. William White, M.D. Edited by WILLIAM W. KEEN, M.D., LL.D., and J. WILLIAM WHITE, M.D., Ph.D. Third edition thoroughly revised. Imperial 8vo; pp. xvi.—1228. Philadelphia: W. B. Saunders, 925 Walnut street.

The first edition of this comprehensive work appeared in August, 1892, the second in November, 1895, and this, the third, edition, in the corresponding period of the year 1899. Since its first publication about 29,000 copies have been sold and it has been adopted as a text-book in more than one hundred medical colleges. No better testimonial to the merit and

popularity of the work need be offered. At the time the first edition was sent out it was acknowledged to be a fair exposition of the status of American surgery, and was so estimated by the leading foreign critics.

The arrangement of the work into four books or divisions is convenient. The first book is devoted to general surgery, which is considered in nineteen chapters, in the first of which surgical bacteriology is admirably set forth. This important topic is placed first because it should claim the student's first attention, a knowledge of it being essential to his understanding of so much that follows. The topics belonging to this subdivision then follow in their natural order of sequence, and are most admirably dealt with.

The second book, consisting of ten chapters, takes up special surgery, which includes surgery of the vessels, bones, nerves, joints, lymphatics, skin, and the like, and is full of instructive interest. The third, treating of regional surgery, is scientifically presented; while the fourth, in which operative surgery is described, is fully up to the period in technic.

In this edition several new topics are introduced, among which may be mentioned serum-therapy, leucocytosis, post-operative insanity, Krönlein's method of locating the cerebral fissures, Hoffa's and Lorenz's operations for congenital dislocations of the hip, Allis's researches on dislocation of the hip-joint, lumbar puncture, the treatment of exophthalmic goitre, the surgery of typhoid fever, Krause's method of skin-grafting, the use of gloves, and many others of abiding interest, all of which are important to a surgeon who wishes to keep abreast of the progress of his art.

Many of the sections have been enlarged, among which are those on appendicitis, fractures, and gynecological operations, while in still others improvements are noted which involve almost all portions of the work. The illustrations, too, are for the most part of the best, many being original and all are helpful to a correct understanding of the text. We may mention, also, that the chapter on the surgical application of x -rays is a most valuable exposition of the subject and has been revised to the present period, with ample illustrations.

The work of the several contributors has been so carefully prepared that there is no unnecessary repetition, and their portions so blended as to make it impossible to differentiate the work of each. This gives the treatise a homogeneity almost, if not quite, equal to one written by a single author, whereas it has the advantage of the experience of many writers—a not inconsiderable one for a purchaser who must needs limit his library.

We have only attempted to give an outline of the treatise, as it has been before the profession sufficiently long in its earlier editions to be quite generally known and appreciated. The changes mainly are of importance to note here, and to again accentuate the distinctly American character of the work. It must ever remain a monument to the genius of American surgery, and to the skill of American surgeons. Finally, it belongs in the library of every surgeon, at home and abroad, who would pretend to keep pace with the progress of surgical literature.

M.D., Ph.D., LL.D., Professor of the Practice of Medicine and of Clinical Medicine in the Medico-Chirurgical College, Philadelphia; Attending Physician to the Medico-Chirurgical and Samaritan Hospitals, Philadelphia, etc. Octavo, pp. 1292. Illustrated with four colored plates and numerous engravings. Third edition revised. Philadelphia: W. B. Saunders, 1899.

It is but little more than two years since this text-book issued from the press, and now we have before us the third edition. It is therefore quite in evidence that it has become a successful competitor for a permanent place amongst the literature of internal medicine, as well as a formidable rival of the many good text-books on practice. One need not search the pages of this book very long to discover adequate reasons for its popularity.

It will be ascertained early that Anders has written a treatise that will appeal very strongly to students. Teachers have not been slow to recognize this fact, hence have in large numbers recommended it to their pupils. The make-up of the book is of an attractive form; its division into parts and sections, instead of chapters renders it easy for reference, the display types of each section and subsection being prominent and clear. For example, we will select the title scarlet fever, which we find subdivided as follows: definition, pathology, etiology, clinical history, clinical types, complications, diagnosis, prognosis, and treatment. These, in the main, have subheads as, general head, etiology; subheads, bacteriology, modes of conveyance, mode of infection, predisposing causes, and immunity. Thus it will be observed that

the essential features of the disease—its clinical pictures—are made to stand out in a manner to catch the eye and impress the memory.

Another salient point for commendation is the frequent employment of diagnostic tables that are scattered everywhere throughout the text, and which are supremely helpful in establishing differential diagnosis in many diseases. And this brings us to remark that Anders, himself being one of our great clinicians, has presented an essentially clinical treatise, one in which the clinical pictures of disease are well drawn and properly colored, if we may be permitted to extend the figure. He lays particular stress upon the importance of diagnosis everywhere throughout the book, and teaches the best methods of making it in a thoroughgoing manner.

The changes made in this edition remain to be noted. The section on infectious diseases has been thoroughly revised, to meet the advances made in this direction; a few new topics have been introduced, such as glandular fever, ether-pneumonia, splenic anemia, periodic paralysis, etc. Many topics have been completely rewritten, *e. g.*, the plague, Malta fever, diseases of the thymus gland, the liver cirrhoses, and progressive spinal muscular atrophy; many articles have been thoroughly revised, such as those on typhoid fever, yellow fever, lobar pneumonia, tuberculosis, diabetes mellitus, gout, diseases of the circulatory system, jaundice, etc., etc.; a new chapter has been added in the section on nervous diseases, and the whole section revised; and, finally, six new illustrations have been added. The size of the volume remains practically unchanged, while the index has been enlarged and improved.

We regard this treatise on the practice of medicine as one of the best text-books extant, and as a safe guide for the student as well as practitioner. Among the later contributions to the literature of internal medicine it has no superior.

A TEXT-BOOK OF MATERIA MEDICA, THERAPEUTICS, AND PHARMACOLOGY. By GEORGE F. BUTLER, Ph.G., M.D., Professor of Materia Medica and of Clinical Medicine in the College of Physicians and Surgeons, Chicago, Medical Department University of Illinois; Professor of General Medicine and Diseases of the Digestive System in the Chicago Clinical School. Octavo, 860 pages. Illustrated. Cloth, \$4.00 net; sheep or half morocco, \$5.00 net. Third edition, revised. Philadelphia: W. B. Saunders, 1899.

It is believed by this author, as stated in his preface, that the arrangement embodying the synthetic classification of drugs based upon therapeutic affinities, is the most philosophical and rational, as well as that best calculated to engage interest in the study of the subject. He has, therefore, adopted this plan in the construction of his text-book. That the belief was well-grounded is indicated by the fact that in a little more than three years three editions of the work have been called for and published.

It is a business-like treatise, divested of all jugglery with words, giving exact facts relating to remedies as at present understood, presenting them in a clear and attractive manner. The pharmaceutical section has received excellent treatment at the

hands of its author, wherein he considers only those drugs of admitted practical value, eliminating the untried or seldom used remedies. This has enabled him to offer a vast amount of material without making the book cumbersome.

Poisons or poisonous drugs are classified under the heads, *untoward action* and *poisoning*; the former giving the poisonous effects of medicinal doses, and the latter toxic doses and effects, proper. Due attention is given to spelling and pronunciation, two very important matters. Nothing so irritates the eye and ear of a well-trained medical man as to see and hear medical language miswritten and mispronounced. It is a comfort to find special emphasis here laid upon the art of speaking and writing correct medical English.

A comprehensive section on the important question of prescription-writing is added to all the other important material with which this volume teems. A badly constructed or illegible prescription is beyond the pale of excuse in this age, and we commend this section to old and young alike who are deficient in this essential part of a physician's education.

This edition has been adequately revised to bring it forward to the present period, and it may be accepted as guide to teacher, practitioner, and student with entire confidence.

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THE SEXUAL INSTINCT; Its Use and Dangers as Affecting Heredity and Morals. By JAMES FOSTER SCOTT, B.A. (Yale University), M.D., C. M. (Edinburgh University); Late Obstetrician to Columbia Hospital for Women and Lying-in-Asylum, Washington, D. C., etc. Small oc-

tavo, pp. 436. New York: E. B. Treat & Co. 1899.

Dr. Scott says: "The design of this work is to furnish the non-professional man with a sufficiently thorough knowledge of matters pertaining to the sexual sphere—knowledge that he cannot afford to be without." Such knowledge will prompt the individual to maintain himself as a desirable ancestor, husband and citizen, and the blessings of his self-restraint will accrue to his posterity; to respect the rôle of woman in nature and abhor men who debase the elements of their manhood, veracity, cleanliness, health and fitness for ancestorship. The subject is painful and repulsive, but man cannot choose his duty and must not evade it.

This subject appeals to Nature's highest laws relating to the preservation of the individual and the welfare of the race. The strongest instincts, predominant, permanent and common to all beings, are those of self-preservation and propagation. The first prompts us to do those things which promote health and prosperity; the second is the source of purity and nobility of character. It fits us for battle, for beauty, and for great achievements, mental and physical; without it the family would disappear, immorality, criminality, insanity and evil tendencies would reign in many forms.

It is every man's duty to rightly understand this, as well as other parts of his nature, and to comprehend that the perverse use of this function debases not only himself but others. Pure sexuality is a boon to the individual and the race; sensuality is a curse to both. The best authorities agree that continence does not beget

disease, and that men of the strongest character have lived chaste lives. The sexual function is the last to appear and the first to decline, indicating that man should beget his kind in the prime and vigor of his manhood. The laws of God and man prescribe rules for the government of the sexual function and penalties for their infraction.

We recall that Dr. H. M. Congar, many years ago, read a paper before the Buffalo Medical Association (*Buffalo Medical Journal*, October, 1867), adducing from biblical authority rules for the government of the sexual relations of the married. The first one was that the male, as well as the female, should be as a maiden untouched. He alleged that the unfaithful could not beget a pure and undefiled progeny, and referred to the fact that the female dog, after bearing pups from a cross-breed cannot bring forth her own species even by one of her own kind. His twelfth rule commended man and wife to have intercourse only with the desire to propagate, and then only under divine guidance through prayer.

Chapter 2 of the book under consideration treats of the physiology of sexual life, and is one of the best in the book. Scott says that the "climacteric" in man comes on between the fiftieth and sixty-fifth year; that the spermatozoa usually disappear from the seminal fluid about the sixty-second year—although the ability to copulate satisfactorily continues several years more, when,

"Years steal

Fire from the mind, as vigor from the limb;

And life's enchanted cup but sparkles near the brim."

Chapter 3 should be read by every father as well as his son. The author says a man's personal welfare is not dependent on his sexual gratification. The conservation of the complex seminal fluid is invigorating and develops all that is best and noblest in man—which is lost to the man who gratifies his lusts.

The character of the incontinent man is degenerated, and progressively degenerates with his progressive lust. The libertine and the fornicator are liars. The sexual instinct exerts a powerful influence over the life history of every man and woman, but its indulgence must be kept within physiological limits, which are afforded by the married life; otherwise it is the sensual instinct. Few worshipers at the shrine of Venus escape the penalty of venereal disease and many become penitents at the throne of Mercury.

Chapter 4 concerns woman, and the unmanliness of degrading her. "The rôle of the male in nature is secondary to that of the female," says Dr. Scott, "and it is more important to have highly endowed mothers than fathers"—the man generates, the woman perfects and brings forth. Reason tells us to guard, protect and reverence motherhood; even beasts show consideration for their females.

Chapter 5 tells us of some of the influences which incite to sexual immorality, such as the abuse of spirituous liquors, dancing, immodesty of dress, the modern stage, the nude and vulgar in art, and impure literature.

Chapter 6 treats of prostitution, and the influences that lead a woman into such a life. Then follow chapters treating of the regulation of prostitution, criminal abortion, venereal diseases and onanism. Much of this

material rather relates to sexual perversion than the sexual instinct. The treatment and consideration of venereal disease had better have been left for the author of a treatise on that subject to deal with.

This book should be read by the layman as well as by the physician. It is the work of a student of the subject. It is interesting, instructive, and a powerful plea for sexual morality.

The book corresponds in general appearance to the series known as "medical classics," published by the same house.

BYRON H. DAGGETT.

THE PATHOLOGY AND TREATMENT OF SEXUAL IMPOTENCE. By VICTOR G. VECKI, M.D. From the Author's Second German Edition, revised and rewritten. Duodecimo, pp. 291. Philadelphia: W. B. Saunders, 1899.

The second edition of Vecki's work finds the profession somewhat changed in its attitude upon this subject. The medieval way of treating this subject by not treating of it at all, is no longer tenable in these latter days of the nineteenth century and the profession owes a debt of gratitude to Vecki for fighting manfully against a storm of opposition.

The text which serves the purpose and the sole object of the work can be found on page 27, which reads as follows: "Every being instinctively longs for enjoyment. The desire for enjoyment is certainly justified, and only hypocrites or people with limited views of things in general can demand that man shall work and fulfil duties without the moment of gladness and

gratification that are so scarce in comparison to the bitterness of life." And then the author quotes as follows from Renan: "La Nature veut que nous jouissons." "Sensual love and the so-called ideal love, which grows out of it, but which is quite an impossibility where there is no sexual vigor, are foremost among the few joys and gratifications." The author will certainly find any number of libertines and roués who will agree with him in these propositions, and who regard the genitalia more as toys for recreation than for procreation. A larger class of well-minded individuals, in and out of the profession, however, will disagree with him in this respect, believing that propagation is the chief function of these organs and that their normal healthy action is necessary for the future race. Happily, the author does not devote the entire book to the illustration and exposition of his text, but treats of the whole question in a refined, scholarly and scientific manner. Several short chapters are devoted to the anatomy and physiology of the sexual organs and then follow five chapters on the subject of the book proper,—impotence. The author considers the congenital malformations and defects of the sexual organs, acquired defects, and then the true causes of impotence, such as inherited predisposition to impotence, neurasthenia, professional and senile impotence. These conditions are carefully considered and well depicted.

The author's ideas and suggestions on treatment in the chapters that follow are sound and embrace the latest additions to our knowledge of the therapeutics on this subject.

Casper, Eulenburg, Fürbringer, Krafft-Ebing, Schrenck-Notzing and others have given Vecki's work due

consideration and the work is destined to do a great deal of good

The book is without illustrations, which is commendable.

WILLIAM C. KRAUSS.

LECTURES UPON THE PRINCIPLES OF SURGERY. Delivered at the University of Michigan. By CHARLES B. NANCREDE, A.M., M.D., LL.D., Professor of Surgery and Clinical Surgery; Emeritus Professor of General and Orthopedic Surgery, Philadelphia Polytechnic, etc. With an appendix containing a résumé of the principal views held concerning inflammation. By William A. Spitzley, A.B., M.D., Senior Assistant in Surgery, University of Michigan. Illustrated. Philadelphia: W. B. Saunders, 1899. Price, \$2.50.

The author of this book has been so long identified with the literature of medicine and, moreover, has been engaged in teaching anatomy and surgery so successfully for so many years, it is but natural that he should embody his experience in book form and send it forth to his colleagues.

As might have been anticipated, therefore, Nancrede has presented a work that is unlike other surgical treatises; it is in the form of lectures that have been delivered to his classes at Ann Arbor, hence, in effect, the author speaks direct to the reader, thus giving his words a forcefulness that otherwise they might not attain.

It is not possible, in the narrow limits the author has set for himself that the whole field of surgery can be plowed and harrowed, but he has taken up the most practical part of it for cultivation. Hence inflammation is given considerable importance,

which is well, since it forms the basis of many surgical maladies. Six lectures are not too many in which to discuss its manifold phases, and Nancrede has done himself and his subject credit by the method in which he has dealt with it. He clearly sets forth the topic in the light of our present understanding of it, which includes, of course, the vast help derived of late from bacteriology.

The surgical fevers, so-called, are ably handled and their relation to toxins fully described. Sepsis and fever usually go hand in hand, and their relationship is an intimate one. Only the trained surgeon can read symptoms aright, and Nancrede has helped to make the way clearer to a true interpretation of their real meaning. Suppuration, gangrene, ulceration, erysipelas, tetanus, glanders and tuberculosis are all treated intelligently as well as instructively. They are all topics full of import to the practical surgeon and must be fully mastered before he can hope to establish a reputation as such.

Hemorrhage and hemostasis are questions of great moment, especially to the young practitioner; he makes his fame early many times through competency to deal with an emergency. The author treats this subject scientifically, giving anatomical and surgical application to it, in a most satisfactory manner. Next comes the treatment of wounds, in which asepsis and antisepsis are discussed with perspicacity and terseness, though, withal, not tritely nor meagerly. Sterilization, both of the operation field and instruments, of operator, assistant and dressings, in short of the entire operative environment, so inseparably connected with asepsis and antisepsis, are all carefully

and completely described in conjunction with the treatment of wounds. It is a thoroughly modern exposition of the whole subject.

The next group includes shock and collapse, traumatic delirium, anesthesia and anesthetics, preparation of the patient and accidents during anesthesia, local anesthesia, and all other important questions of near kinship that are accessory to, or a part of, the operation and its conduct. Minute directions are given as to the administration of ether and chloroform, and how to guard against or deal with accidents that occur therefrom.

We have taken up these subjects in groups rather than to consider each lecture separately, which would unnecessarily prolong this notice. There are, of course, many other topics treated in the book, but we have only thought best to mention a portion of them; this, at least, is sufficient to convey an impression as to its value. An appendix containing a résumé of the principal views held concerning inflammation, by Dr. Spitzley, assistant to the author, concludes the text. It is an interesting historical review that will prove instructive to the student. An excellent index closes the volume.

The author has adhered to modern orthography in the construction of his valuable treatise, which is to be commended. There are a few good illustrations in the book, many of which were drawn by Dr. Spitzley. We are of the opinion that the engraver's art might have been more extensively employed to good advantage, for good illustrations in profusion add very much to the attractiveness, if not the value, of a book. Nowadays, too, they are comparatively cheap, hence the cost of production is

not greatly increased thereby. The volume, however, is a distinct and able contribution to the good literature of surgery of the present day, and will command the respect of teachers as well as pupils.

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THE HYGIENE OF TRANSMISSIBLE DISEASES; Their Causation, Modes of Dissemination and Methods of Prevention. By A. C. ABBOTT, M.D., Professor of Hygiene and Director of the Laboratory of Hygiene, University of Pennsylvania. Octavo volume of 311 pages. Illustrated. Philadelphia: W. B. Saunders.

Among the medical books that appeared in 1899 this one stands out conspicuously for its importance. Its title is unique, it treats of the most intricate questions relating to preventive medicine, and, withal, it presents them clearly, understandingly, and instructively. It is with the problems found in this work that the profession finds itself confronted at the present period, and which it must master within a reasonable time, or else confess to its incompetency, and fall back to its old ways, content with prescribing drugs to combat symptoms. Surgeons will then be entitled to all the real credit left to the guild of medicine.

After a brief introduction, in which the importance of preventive medicine and its bearing on the profession are discussed, a section on the causation of disease is offered. In this the author sets forth the relations of micro-organisms to disease, and enumerates the several predisposing factors that operate to engender many maladies. In the second section transmissible

diseases are taken up, and brief sketches of the commoner ones are given. Typhoid fever naturally is first considered; it is presented in minute detail, and numerous charts are published illustrating outbreaks of the disease both in this country and abroad. Prominent among the diseases considered in this section are Asiatic cholera, tuberculosis, acute croupous pneumonia, diphtheria, influenza, bubonic plague, venereal diseases, smallpox, measles, scarlet fever, malarial fever, rabies, and diseases due to animal parasites. Many others are discussed, and all in a most instructive manner.

The author then proceeds to the consideration of prophylaxis in general against infectious diseases, including vital, chemical, and physical processes, the management of contagious diseases, and quarantine, this constituting the third section of the book. These questions are discussed with great intelligence and afford the practising physician valuable information, without which he would be incompetent to manage maladies of communicable class. Especially should every general practitioner be familiar with all modes of disinfection, and the various methods to be employed to prevent the spread of infectious diseases. Intelligence here means the saving of life—ignorance, its sacrifice.

This work does not pretend to be a complete treatise on hygiene, but it assumes to apply the best known laws of hygiene to transmissible diseases, with a view to their control, limitation, or abolition. It is the duty of physicians to exhaust all scientific knowledge in preventing the spread of infectious diseases; in other words, preventable diseases ought to be prevented, or if this in a given instance can-

not be done, the responsibility should be placed where the fault lies. If municipalities are derelict in duty after having the way pointed out by scientific men, versed in the laws of health and the proper application of preventive medicine, those who are responsible should be indicated, and, if need be, the courts should be invoked to correct the evil. Especially should the pollution of the water supplies of our cities be prevented, no matter at what cost.

If every physician will obtain and read this book carefully he will be better qualified for his work, and his advice on all questions of public and private sanitation will be more valuable. It is a most suitable companion to the text-book on medicine, for it elaborates the hygiene of disease much more fully than it is possible for the general treatise to do. It is a most fortunate thought to publish a monograph on this subject, for it groups and makes available literature otherwise scattered through tomes and brochures, or else altogether unpublished.

* * *

A MANUAL OF DISEASES OF THE EYE.
By EDWARD JACKSON, A.M., M.D.,
Professor Emeritus of Diseases of
the Eye in the Philadelphia Poly-
clinic; Member of the American
Ophthalmological Society, etc., etc.
With 178 illustrations and two col-
ored plates. Philadelphia: W. B.
Saunders. 1900.

The author in his preface modestly states that this book is intended to meet the needs of the general practitioner and the beginner in ophthalmology. The book is really a good text-book, with the latest treatment of diseases usually met with in the practice

of ophthalmology. There are valuable features added which are not found in other text-books; we might cite as examples: the localization of pain, pupillary reaction and the proper recording of cases. Diseases of the retina are more fully illustrated than is ordinarily the case in text-books. Massage of different kinds, application of heat and cold, with valuable formulæ are included, while his bibliography at the end of each chapter shows the large amount of material of comparatively recent date he has utilized in order to bring to bear the best description on each subject under discussion.

Common operations are well illustrated, and ocular symptoms of disease will be found useful frequently for reference. We think it a mistake not to go more particularly into the treatment of some conditions of muscular imbalance for some of the most troublesome of these are dismissed with scanty detail as to treatment. The illustrations and general typographical appearance of the book are excellent.

RICHARD H. SATTERLEE.

Books have been received as follows:

A TEXT-BOOK OF EMBRYOLOGY FOR STUDENTS OF MEDICINE. By JOHN C. HEISLER, M.D., Professor of Anatomy in the Medico-Chirurgical College, Philadelphia. With 190 illustrations, of which twenty-six are in colors. Price, \$2.50. Philadelphia: W. B. Saunders. 1899.

A TEXT-BOOK OF DISEASES OF WOMEN. By CHARLES B. PENROSE, M.D., Ph.D., Professor of Gynecology in the University of Pennsyl-

vania; Surgeon to the Gynecean Hospital, Philadelphia. Octavo, pp. 531. Illustrated. Third edition, revised. Philadelphia: W. B. Saunders, 925 Walnut Street. 1900.

ESSENTIALS OF DISEASES OF THE SKIN INCLUDING THE SYPHILODERMATA. Arranged in the form of questions and answers, for students of medicine. By HENRY W. STELWAGON, M.D., Ph.D., Clinical Professor of Dermatology in the Jefferson Medical College; Physician to the Department of Skin Diseases in Howard Hospital, etc. Fourth edition, revised and illustrated. Saunders' Question Compends No. 11. Price, \$1.00. Philadelphia: W. B. Saunders. 1899.

ESSENTIALS OF MEDICAL CHEMISTRY, ORGANIC AND INORGANIC. Containing questions of Medical Physics, Chemical Philosophy, Analytical Processes, Toxicology, etc. Arranged for students of Medicine. By LAWRENCE WOLFF, M.D., Demonstrator of Chemistry, Jefferson Medical College; Physician to the German Hospital, etc., etc. Fifth edition, revised by Smith Ely Jelliffe, M.D., Ph.D., Professor of Pharmacognosy, College of Pharmacy, New York, etc. Saunders' Question Compends No. 4. Price, \$1.00. Philadelphia: W. B. Saunders. 1899.

ESSENTIALS OF ANATOMY, INCLUDING THE VISCERA. Arranged in the form of questions and answers, for students of medicine. By CHARLES B. NANCREDE, M.D., Professor of Surgery and Clinical Surgery in the University of Michigan; Emeritus

Professor of General and Orthopedic Surgery, Philadelphia Polyclinic, etc. Sixth edition, revised by Fred J. Brockway, M.D., Assistant Demonstrator of Anatomy, Columbia University, New York. Saunders' Question Compend No. 3. Price, \$1.00. Philadelphia: W. B. Saunders. 1899.

ESSENTIALS OF PHYSICAL DIAGNOSIS OF THE THORAX. By ARTHUR M. CORWIN, A.M., M.D., Instructor of Physical Diagnosis at Rush Medical College; Attending Physician to the Central Free Dispensary, etc. Third edition, revised and enlarged. Price, \$1.00. Philadelphia: W. B. Saunders. 1899.

A MANUAL OF THE PRACTICE OF MEDICINE, Prepared Especially for Students. By A. A. STEVENS, A.M., M.D., Professor of Pathology in the

Woman's Medical College of Pennsylvania; Lecturer on Terminology and Instructor in Physical Diagnosis in the University of Pennsylvania; Physician to St. Agnes' Hospital and Out-patient Department of the Episcopal Hospital, etc. Fifth edition, revised and enlarged. Illustrated. Philadelphia: W. B. Saunders. 1898.

LOVE AND ITS AFFINITIES. By GEORGE F. BUTLER, M.D., Professor of Materia Medica and Clinical Medicine in the College of Physicians and Surgeons, Medical Department of the University of Illinois; Author of "Materia, Therapeutics and Pharmacology," etc. Octavo, cloth, gilt top, 134 pages, with photogravure frontispiece, "Cupids Sharpening Their Arrows," by Raphael Mengs. Chicago: G. P. Engelhard & Co., Publishers. 1899.

(44) HÆMOSTASIS OF THE LIVER.

Tricomi (*Il Policlinico*, September 15th, 1899) gives the results of certain experiments on dogs with regard to the best method of stopping hemorrhage in operations (hepatectomies or wounds) on the liver. The method selected by the author for trial was that of plugging with gauze; he found that in wounds 4 to 3 cm., plugging alone was sufficient. In hepatic resections (as a rule 30 to 40 grams were re-

moved), plugging alone was not always a safe guarantee against hemorrhage, but combined with isolated ligature of the vessel it was satisfactory. Digital compression of the hepatic hilus was useful as a temporary measure. In resection it is better to do the operation in two separate stages. In the case of wounds, after removing the plug, healing occurs until only a slight depression is left.—*British Medical Journal*.

THE EDITOR'S DESK

STATE CARE OF THE CONSUMPTIVE.

The trend of modern scientific inquiry and investigation into the nature and cause of tuberculosis is that it is an infectious disease communicable from man to man, and, therefore, belongs in the category of contagious diseases. The teachings of the Nestors of medicine have always been that contagion is nowhere and in no way so effectively combatted and stamped out as in the isolation and segregation of contagious diseases. It makes little difference whether the contagion is virulent, as in smallpox, or mild, as in consumption; the rules of prevention apply to both with equal force, or, if anything probably are more applicable in the latter because of the apathy of the general public regarding so-called mild infections. The education of the general public to the necessity of isolating and segregating the consumptive classes is just now under way in the Empire State and in due time the work will be fully accomplished.

The promoters of this undertaking must await patiently their time, bearing in mind the bitter struggle over the passage of the "State lunacy care" act, and still more recently the frequent delays encountered in the passage of the "State epileptic care" act and the establishment of the Craig colony of epileptics, at Sonyea, N. Y.

The introduction of a bill in the New York legislature for the isolation of the consumptive is an act of far-reaching import and one which strikes at the homes of thousands in the Empire State, because if this venture means anything, it means primarily that the companions of the consumptive are to be protected, and only secondarily that the consumptive himself must go under state supervision and treatment. The measure becomes then obligatory upon the consumptive and not merely a discretionary undertaking on his part, and with this view of the case it behooves the legislature

to hasten slowly, to gather information from all those qualified to speak with authority and to have the best interests of the commonwealth constantly in mind.

The agitation of this question was begun by Dr. John H. Pryor of Buffalo, in a paper read before the Medical Society of the State of New York, in January, 1898, and since that time has been constantly before the profession.

In brief, the proposition was made that by the establishment in the Adirondacks of a sanitarium to which all consumptives should be removed as soon as the disease made itself manifest, a very large proportion of those who under present conditions would die could be completely and permanently cured. It was manifestly impossible to carry out such a plan in any way except by the aid of the state, so a bill was drawn up which was introduced in the legislature last winter, and which provided for the establishment and maintenance of such an institution, appropriating \$200,000 for beginning the work.

The bill received very careful consideration at the hands of the Senate Finance Committee and the Assembly Committee on Ways and Means. Its passage, however, was defeated mainly by the opposition of the State Board of Charities. This organization takes upon itself the duty of supervising all legislation affecting eleemosynary institutions of all kinds, and largely through its influence the bill was held up in the legislature, not because of any objections that the members of the board had to to its scheme, but in order that the board might have an opportunity to investigate for itself and determine whether or not the project was a practical one and whether it was the best thing for the state to do. During the past year a committee of the board, consisting of Harvey W. Putnam of Buffalo, E. V. Stoddard of Rochester, and Stephen Smith of New York held frequent meetings, and it is understood will recommend to the

legislature, at its coming session, that a system of local institutions be established with one or more State institutions, which shall be maintained by a per capita tax on the locality from which each patient comes.

Besides the Medical Society of the State of New York, and the State Board of Charities, the New York State Medical Association, the New York Academy of Medicine, the Buffalo Academy of Medicine, and other organizations have placed themselves on record as favoring such a plan and have urged their representatives in the legislature to support a measure creating such sanatoria. The International Congress, held at Berlin, the past summer, for the study of the preventability and cure of consumption, was unanimous on the question of isolation and state care of the consumptive and urged that this plan be adopted by other civilized governments. The plan is already in vogue in Germany—a State hospital being located not far from Berlin.

A hospital for sailors afflicted with tuberculosis has been established on the old Fort Stanton military reservation in New Mexico at the instance of Surgeon-General Walter Wyman of the marine hospital service. The Fort Stanton reservation is one of the finest available for the use to which it will now be devoted, consisting of more than 10,000 acres, situated in the Capitan Mountains, 6000 feet above the sea. As soon as convenient all the consumptive patients who are now in the various marine hospitals of the country will be moved to the reservation. The United States Government has also established a consumptive hospital in the Arizona highlands for the benefit of consumptives in the regular army. Massachusetts heads the list of States in establishing consumptive hospitals, its sanitarium at Rutland having been opened more than a year ago. The legislatures of other States, notably Illinois, Maryland, Pennsylvania and Ohio, are making strenuous efforts to pass measures this winter appropriating large sums of money for this purpose. Private institutions have also been established with the same object in view, especially the Loomis Sanitarium, at Liberty, Sullivan county, and the National Jewish hospital for consumptives, at Denver, Col.

The time is ripe for the Empire State to undertake this responsibility, and in a broad, humanitarian way, do for the con-

sumptive what it has done for the lunatic and epileptic—give the unfortunate individual a chance of regaining health and usefulness, and at the same time protect itself by preventing the spread of a contagion which decimates like a victorious army marching irresistibly and unrelentingly through a defenseless country.

THE ANTI-VIVISECTION CRUSADE.

The perennial Gallinger of New Hampshire (let us not fail to properly locate him) has bobbed up serenely again with his regulation bill for the "Further Prevention of Cruelty to Animals in the District of Columbia." Under this adroit title it is sought to pass a measure which is intended to, and will in effect, strike a severe blow to the usual physiological experimentation and demonstration upon lower animals as ordinarily conducted by teachers of physiology in our schools and medical colleges.

Congress is asked to pass the bill to apply to the District of Columbia, but once in operation there it is thought to be an easy matter to extend its provisions over the entire country, which, no doubt, would be the case. But if the bill were to become a law only in the District of Columbia incalculable harm would be done to the country at large. The experimental work would not only be suspended at the medical colleges at Washington, and in the three medical and surgical bureaus of the general government, those of the army, navy and marine hospital service, but above and beyond all, the bureau of animal industry, that important branch of the Department of Agriculture, would be closed to its most essential service.

If the self-constituted defenders and protectors of animals could be made to exchange fanaticism for reason, were they capable of so doing even for a short time only, they would perhaps be made to comprehend, if not admit, that the highest exercise of their prevention-of-cruelty-to-animals function consists in a study of the diseases that infect fowls and animals. The cattle-raising, sheep-herding, and fowl-producing industries may well raise their voices against such mistaken, if not absolutely wicked, "protection."

If our distinguished civil service reform-



MAJOR-GENERAL LEONARD WOOD, U. S. V.

Governor-General of Cuba.

ers and quondam homeopathic doctor, the Senator for New Hampshire, who has become the most conspicuous champion of the anti-vivisectionists in the halls of Congress, can be persuaded to "call off his dogs" for a little while, we venture that some of these "experimenters" will cure him of the rabies that seems to have seized him. Meanwhile it becomes the medical profession to unite in opposition to the bill in question (Senate bill No. 34) and to invoke the aid of every intelligent representative in either house of Congress in an attempt to defeat the measure.

We print elsewhere in this magazine an appeal to the members of the medical profession on the subject, which we ask our readers, one and all, to examine in detail and to take hold of immediately, with a view to arrest an impending calamity.

A DOCTOR IN THE ARMY.

Thirteen years ago a young doctor named Leonard Wood was made happy by being commissioned a first lieutenant and assistant surgeon in the United States Army. On December 13, 1899, Leonard Wood was confirmed Major-General of Volunteers and assigned as Military Governor to the command of the Division of Cuba.

Gen. Wood won the rank which he now holds by hard work, ceaseless toil, the exercise of rare tact and wisdom and the exhibition of executive ability which is seldom equalled. He has risen from a junior medical officer to the highest rank in the line of the army by merit alone.

At the time of the declaration of war with Spain Gen. Wood was an assistant surgeon in the medical corps with the rank of Captain. His work in this capacity was like everything else he has done—thorough. While serving as an assistant surgeon war was declared and he was made Colonel of the Rough Riders, largely we believe, through the influence of Theodore Roosevelt, his intimate friend and companion in arms. That he was eminently fitted for this command he has shown on many occasions while on duty at Western posts. On more than one occasion he had given evidence of his rare judgment and his ability to manage men, while serving with detachments on field service in some

of the Indian scurries. We all know of Col. Wood's bravery, his brilliancy and dash as commanding officer of that wonderful band of troopers at La Quasimas and San Juan Hill, and how his splendid work won for him promotion to be a Brigadier General, and his subsequent assignment to command the Province of Santiago. The story of his work there is too fresh in the minds of the newspaper readers to need any extended mention. He brought all his executive powers into play; he commanded like a soldier and he ruled like a physician. He was always approachable, always attentive to the wants of the natives and he won their confidence and esteem. Here his medical training stood him in good stead, for he made of the pest-hole, Santiago, a clean, healthful, inhabitable, civilized city.

Native dissatisfaction with the governing power of Cuba became apparent, and a change was seen to be a necessity. President McKinley looked all through the army for a new governor and failed in his quest. Then he turned to the volunteers, and the one man was chosen—Leonard Wood; the man who had cleaned a pest-hole, who had established schools in barren wastes; who had reunited warring factions; who had brought law and order out of chaos and anarchy, teaching a turbulent, suspicious and reckless population to look upon him as the friend, and upon the United States Government as its protector. This he had done in Santiago; this, too, would he do in Havana. How well he was chosen has been shown by the result of his brief rule. Already peaceful conditions are arising in the Island of Cuba, and Maj.-Gen. Leonard Wood is the peacemaker and the friend in the very heart and center of the city where all hatred and malice, envy and discontent and plot and counter-plot against everything American was given birth; where jealousy was begot and intrigue given life.

Gen. Wood is a young man, and naturally the tradition-bound army men of the old school felt a good deal disturbed when he was appointed; but it soon resulted in quietude, and they have had the good sense not to make exhibitions of themselves. Dr. Wood can, when the case is sufficiently serious, give strong medicine, and Gen. Wood as governor of Cuba, is going to be supreme and establish a stable government.

He is a specialist in cleaning out and cleaning up old prisons. To do that he is going to be governor in all that it implies. Yet, withal he is a man with a human heart, a commander with a physician's sympathy—for all of which Cuba should be grateful.

The attention of our readers is invited to the circular addressed to the friends of the *QUARTERLY*, which will be found in the front advertising form of this number. We feel greatly indebted to the medical profession for the cordial support we have received from so many sources, and for the contributions we have received from prominent physicians throughout this country and Europe.

We desire to extend the usefulness of the magazine still further, and trust it will not be considered officious for us to call attention to the matter in this way. We expect to publish other valuable contributions in the near future and constantly advance along the lines of first class medical journalism.

THUMB-NAIL SKETCHES.

This is the thumb-nail picture of a man who is known from one end of the country to the other, either personally or by reputation. To speak of Richmond, Va., brings to mind the name of Dr. George Ben Johnston, as amiable a



gentleman, as tender a physician and as brilliant a surgeon as the South has ever produced. In Richmond he is the head and front of all that is progressive and modern in medicine, and his professional and personal reputation is one of which any one might well

be proud. Go where you will—where medical men gather—and speak George Ben Johnston's name and at once will begin a symposium of his deeds as a man, a citizen and a physician. When a man is well-beloved of his fellows one will notice that he is generally spoken of in an endearing, familiar manner. So with Dr. Johnston.

Those who know him call him Ben or George Ben or George Ben Johnston.

The face of the man is indicative of his character. This incident will illustrate him best, because he is a man of warm sympathies and generous impulses. He was en route to New York during our war with Spain. Coming up from Washington he saw a soldier on the train—just a soldier in an every-day car. Dr. George Ben was in a parlor car. Those were days when one stumbled across a returning soldier at every corner. But there was something about this soldier which was unusual. He looked pale and thin, but the thing which attracted Dr. Johnston's attention was his accent and his all-evident Virginian nativity.

"Where're you from?" asked the doctor.

"Staunton, sir," replied the soldier.

"Where've you been, and where are you going?"

"Been down home on sick furlough and I'm going to Montauk Point to report, sir."

"Come with me." The soldier obeyed, and was taken into the parlor car. He had an easy chair; he had lunch. When he reached New York Dr. Johnston found that this soldier had two days to spare and he took him in charge.

"You are my guest," he said to the wondering Virginia soldier, as he registered him at his hotel, as he took him carriage riding, as he showed him the city, as he did everything a generous host could possibly do for a most honored guest. And he sent that Virginia soldier to Montauk Point with a gleam of pleasure in his eye and a heart full of gratitude. He had enjoyed himself; so had Dr. Johnston.

When the soldier asked him what his name was the doctor said: "I'm Dr. Johnston, of Richmond." The soldier looked at him and asked: "Dr. George Ben?"

Truly it is good to be known like that. Dr. Johnston is a good liver, a good dresser, a good friend and a busy physician. What better can be said of a man?

He is professor of the practice of surgery and clinical surgery in the Medical College of Virginia; surgeon to the Old Dominion Hospital; physician to St. Sophia's Home for the Aged; physician to St. Joseph's Female and Orphan Asylum; consulting surgeon to the Richmond, Eye, Ear and Throat Infirmary. He has been president and vice-president of the South-

ern Surgical and Gynecological Association; president of the Richmond Medical and Surgical Society; president of the Virginia State Medical Society; vice-president of the American Association of Obstetricians and Gynecologists.

Up in Detroit, Mich., where the municipal potato patch was originated as a means of relieving the distressed poor, there is a



man who, when one first sees him, gives one the impression that he has hidden forces of mind and personality which, when they are freed of all restraint are liable to rule. There is, too, a look and a general air about him which inspires confidence and holds out the hope that an appeal to him would not be in vain. This man is a surgeon, whose name is familiar to readers of medical journals, whose personality is

felt at national meetings of medical men. Dr. J. H. Carstens cares less for dress and more for his work than most men who have attained his prominence in this country. He has a kindly light in his eyes, a firm mouth, and is always earnest in everything he does or says. Invariably one sees him with a white bow tie, and his general get-up, the cut of his clothes—though always neat—betokens the man who thinks the more of others, the less of himself. When he operates one forgets that he wears a white tie, and thinks only that he is watching a wonderfully clever and careful surgeon, who is bringing, by means of his art and his brilliancy, hope and prolonged life to a sufferer.

Dr. Carstens is professor of obstetrics and clinical gynecology in the Detroit College of Medicine; gynecologist to the Harper Hospital; attending physician to the Woman's Hospital; obstetrician to the House of Providence. He has been president of the Detroit Gynecological Association, president and vice-president of the American Association of Obstetricians and Gynecologists.

OPEN LETTERS.

TO THE MEMBERS OF THE MEDICAL PROFESSION IN THE UNITED STATES.

The cause of humanity and of scientific progress is seriously menaced. Senator Gallinger has again introduced into Congress the bill for the "Further Prevention of Cruelty to Animals in the District of Columbia," which he has so strenuously and misguidedly advocated in the last two congresses. It is Senate Bill No. 34. Twice the Committee on the District of Columbia has, also unfortunately and misguidedly, reported the bill with a favorable consideration. It is speciously drawn to

seem as if it were intended only in the interest of prevention of cruelty to animals, but the real object is twofold: 1, to prohibit vivisection and, 2, to aid the passage of similar bills in all the state legislatures.

It hardly needs to be pointed out that this would seriously interfere with or even absolutely stop the experimental work of the Bureau of Animal Industry, and the three medical departments of the government, the Army, the Navy and the Marine Hospital service. The animals themselves might well cry out to be saved from their friends. No more humane work can be done than to discover the means of the prevention of diseases which have ravaged

our flocks and herds. All those who raise or own animals, such as horses, cattle, sheep, pigs, chickens, etc., are vitally interested in the preservation of their health and the prevention of disease.

The inestimable value of these scientific researches as to the prevention and care of disease among human beings it is superfluous to point out. Modern surgery and the antitoxin treatment of diphtheria alone would justify all the vivisection ever done.

As my attention has been called officially to the introduction of the bill, I take the opportunity of appealing to the entire profession of the country to exert itself to the utmost to defeat this most cruel and inhuman effort to promote human and animal misery and death and to restrict scientific research. It is of the utmost importance that *every physician* who shall read this appeal shall *immediately* communicate especially with the senators from his state, shall also invoke the aid of the representatives from his or other districts in his state, and by vigorous personal efforts shall aid in defeating the bill.

It is especially requested also that all of the national, state and county societies, at their next meetings, take action looking toward the same end. If regular meetings are not soon to be held, special meetings should be called. Correspondence is invited from all those who can give any aid.

The Committee on the District of Columbia consists of Senator James McMillan, Michigan, Chairman, and Senators J. H. Gallinger, New Hampshire; H. C. Hansborough, North Dakota; R. Redfield Proctor, Vermont; J. C. Pritchard, North Carolina; Lucien Baker, Kansas; C. P. Wetmore, Rhode Island; C. J. Faulkner, West Virginia; Thomas S. Martin, Virginia; Wm. M. Stewart, Nevada, and Richard Kenney, Delaware. Personal letters may be addressed to them or to other senators. Petitions should be addressed to the Senate of the United States.

W. W. KEEN, M.D.
President American Medical Association.
Philadelphia, Pa., January, 1900.

solved to restore the former policy of the Association in favor of offering annually a gold medal for meritorious scientific work. The committee for this year, consisting of Drs. George M. Gould, of Philadelphia; E. Fletcher Ingals, of Chicago, and T. W. Huntington, of Sacramento, Cal., desires to direct attention to the following rules governing the competition:

1. The medal shall contain the seal of the United States or a seal of the Association, to be hereafter designed, on one side and an Esculapian staff on the other, together with the name of the recipient of the medal and suitable inscriptions.

2. The commercial value of the medal shall be \$100.

3. A standing committee on prize medals consisting of three members of the Association, shall be elected by the Business Committee as follows: One for one year, one for two years and one for three years, and thereafter one to be elected yearly to hold office until in either case his successor has been duly elected. In no case shall a member of the Business Committee hold a place on the Committee on Prize Medals.

4. The competing essays shall be typewritten or printed and shall bear no mark revealing their authorship; but instead of the name of the author, there shall appear on each essay a motto, and accompanying each essay shall be a sealed envelope containing the name of the author and bearing on its outer surface the motto of identification. No envelope is to be opened by the committee until a decision has been reached as to the most deserving essay, and the other essays have been returned to their respective owners. The committee shall have authority to reject and return all essays in case none have been found worthy of the Association medal. Competing essays must be in the hands of the committee not later than March 1, 1900. For further information address any member thereof.

Will the editor kindly give space to the foregoing in the next issue of the AMERICAN MEDICAL QUARTERLY. Accept thanks in advance for the favor.

GEORGE H. SIMMONS,

Secretary American Medical Ass'n.
Chicago, Jan. 6, 1900.

• COMPETITION FOR THE AMERICAN MEDICAL ASSOCIATION MEDAL.

At the meeting of the American Medical Association, held June 4, 1897, it was re-

PROPOSED INVESTIGATION OF THE NATIVE DRUG PLANTS OF THE UNITED STATES.

The Secretary of Agriculture, Hon. James Wilson, has embraced the following paragraph in his annual report, which, in more particulars than one, is of interest to the medical profession:

The collection of native drug plants in the United States, considered from a purely financial standpoint, aside from medical and humanitarian aspects, involves the expenditure of millions of dollars annually. The commercial extermination of some of the most useful species is already threatened, and doubtless others would be found in the same conditions were the facts known. The price of one native plant, gingseng, our exports of which average more than a million dollars annually, has more than quadrupled in the past thirty years, so that its cultivation, as urged four years ago by this department, has now become profitable. It is clear from this and many similar cases that the native drug industry is capable of either decline or improvement, according to the way in which we handle it.

The Pan-American Medical Congress has recently submitted to me a proposition to co-operate with this department in a technical and statistical investigation and classification of our native drug plants. By accepting this proposal we shall secure, in

a research of which we have long felt the need, the cordial assistance and support of an influential association of learned physicians; we shall encourage each of the other American nations, all of which are represented in the Pan-American Medical Congress, to proceed with a similar investigation of their own medical flora; we shall furnish a basis for the remunerative employment of much land and many people, and we shall stimulate the great growth and growing trade in drugs between the countries of North America and South America. I urge the appropriation of \$10,000 to enable this department to co-operate in this investigation.

It will promote this movement in an important way if the AMERICAN MEDICAL QUARTERLY will publish the foregoing excerpt from the annual report of the Commissioner of Agriculture, and if its readers are asked to write to Senators and Representatives in Congress advocating the appropriation therein referred to.

CHARLES A. L. REED.

Cincinnati, O., January, 1900.

[We deem this a subject of great interest and importance and hope the readers of the QUARTERLY will respond willingly, urgently, and numerously to the suggestion of the Secretary-General of the First Pan-American Medical Congress.—EDITOR.]

FORMULÆ.

FOR HEMORRHAGE.

- R Ol. terebinth f3iij
Ex. digitalis fl f3j
Mucil. acaciæ f3ss
Aq. menthæ pip f3j.
M. Sig.: Teaspoonful every three hours.
(In Passive hemorrhages.)—*Bartholow.*

MENTHOL-COLLODION FOR CON- TUSIONS.

- Menthol.....3 to 6 parts
Collodion.....24 to 27 parts—M
Sig.: Paint on once or twice a day. Not
to be used for joints.—*Journal de Medicin
de Paris.*

HEMORRHOIDS.

- R Cocain hydrochlor gr. iss
Ex. belladonnæ 3j
Ungt. Petrolati 3iij
Ungt. petrolati 3iij
M. Sig.: Apply night and morning.—
Alrich.

USES OF CHLOROFORM WATER.

According to Pouchet, chloroform water is not only an agreeable adjuvant in sleeping potions and the like, but because of its antiseptic qualities is well adapted for the preservation of alkaloids in solution for hypodermic use. It has an analgesic effect on the gastro-intestinal mucosa and may be looked upon also as a mild intestinal antiseptic. Pouchet gives the following formulæ:

- R Morphinæ hydrochlor gr ½
Aq. chloroformi sat 3i
Aq. aurantii fl 3i
Syr. simpl. 3ss.
M. Sig.: Take one-half as sleeping po-
tion.
R Potassi brom 3ss—3i
Aq. chloroformi dil. 3iij
Aq. aurantii fl. 3i
Syr. simpl. 3v.
M. Sig.: Dose as directed.

Dilute chloroform water is prepared by mixing the saturated solution with an equal quantity of distilled water.—*Medical News.*

SPECIAL THERAPEUTICS.

SOAP.

[*Louisville Monthly Journal of Medicine and Surgery.*]

The refinements of an aseptic operation deal chiefly with the best method of rendering the hands of the operator and his assistants, and the field of the operation, as nearly as possible ideally aseptic.

Upon soap great reliance is placed by the surgeon, and the possibility that plain toilet soap may be a medium in which germs could flourish is a contingency which has not received consideration at the hands of bacteriologic investigators. In an article in the *Bristol Medico-Chirurgical Journal*, Dr. J. O. Symes deals with this question and gives the result of an examination of a number of soaps in use at the Bristol Royal Infirmary. His investigations show that all soaps possess antiseptic properties in greater or less degree; that for all practical purposes most so-called disinfectant soaps have no value, but that, in combination with biniodide of mercury, soap is a useful disinfectant. Even with this combination, however, complete sterilization of the hands was impossible, though better results were obtained than with others. Carbolic acid, lysol, izol—all lose their antiseptic properties when combined with soap. An olein base is best suited for an antiseptic soap; superfatted soaps are unfit. Soaps impregnated with antiseptics are more costly than plain soap, but of no greater value as disinfectants.

LOCAL DRESSINGS IN PNEUMONIA AND BRONCHITIS.

There seems to be some difference of opinion as to the value of local treatment and the most effective application to use in pneumonia, some physicians preferring a hot poultice frequently renewed, others advocate the ice bag, and some deny entirely the value of any local treatment other than a cotton jacket, but it is well to bear in

mind that the patient and his friends believe in hot applications, and a physician's reputation is certainly safer with them if his treatment does not run counter to their faith in such matters. Especially would this be true where the fatal termination of the disease followed the use of the ice-bag. An Irish woman under the ice-bag treatment in a hospital near New York, gave expression to her disapproval in the following emphatic language: "Doctor if you don't take off this ice-bag I'll lave the institution if I have to crawl on me hands and knees, you're freezing me."

The results attending the use of hot applications of antithermoline, in several hospitals and dispensaries in New York and vicinity has been so pronounced as to prove this treatment to be very effective. It has the merit of keeping warm and lasting a long time without renewal. It gives the patient a feeling of relief and comfort and the inflammatory condition subsides and resolution takes place very quickly. The dressing comes prepared for use and is infinitely superior to any poultice.

A dressing of antithermoline lasts from six to twenty-four hours, and when ready for removal is dry and warm, so there is no danger of a chill to the parts. It can be used with *absolute safety* at any stage of the disease.

"140 East 85th St., New York.

"Antithermoline in my practice has proved a most valuable remedy in the treatment of pneumonia. It not only allays pain promptly, but owing to its hygroscopic properties, reduces inflammation *rapidly* and *effectually*.

"It should be applied early in the disease directly to the affected area, about $\frac{1}{4}$ inch in thickness, and in extensive inflammations I direct the entire chest, front and back to be covered, outside of which is placed a thick layer of cotton, and the whole kept in place by a snug-fitting bandage.

"Heating Antithermoline before application in most cases enhances its efficiency. The applications are best left on from 6

to 8 hours, although if the patient is resting quietly there is no necessity for its renewal under twenty-four hours or even longer, as it never blisters.

"Of eleven cases of pneumonia successfully treated in this manner, all were immediately relieved of the severe pain and dyspnoea, and sleep was introduced without the use of opiates.

"By its quick action in reducing inflammation, the fever rapidly subsides, the bloody sputa clears up, and resolution is more rapidly established than by the ordinary treatment.

"With the exception of a mild expectorant mixture and a general stimulating diet, the Antithermoline treatment is all that I now use in pneumonia, and certainly the results warrant its being placed in the foremost rank of remedies used for combating that disease.

"C. F. BOOTH, M.D.

"Physician to Metropolitan Throat and Nose Hospital."

Another prominent New York physician says:

"I was rather reluctantly induced to use hot dressings of Antithermoline on a case of Double Lobar Pneumonia, and the result was so evident that I have used it on every case since, and while it may seem a most extraordinary statement, the fact remains that of 31 consecutive cases of pneumonia treated I have not lost a single one since I began using the paste.

"In the Eastern Dispensary of Harlem I use it on all cases of inflammatory nature with equally gratifying results. In chest cases it should be applied hot, evenly, and quite thickly, as it lasts six hours in some cases and thirty-six in others, and the successful termination of the case depends upon the continuousness of the effect produced.

"Patients are pleased with its anodyne effects, as well as its ease of application, as compared with the old-fashioned poultice."

Another New York physician reports:

"Female, age 30, sent for me after suffering several days with a 'cold.' Found her with great pain in right side, reddish expectoration, temperature 103, pulse 36 per minute. Diagnosis, Lobar Pneumonia. I applied a liberal dressing of Antithermoline over the entire right side. The first application reduced the pain and in thirty minutes patient was sleeping quietly. Case progressed nicely with no other treatment. On the fifty day, however, they called me in haste and I found an extension to the left lung, with excruciating pain. Applied very hot Antithermoline with almost immediate relief. Opiates were left with instructions to use if necessary, but none were used during the course of the disease."

Antithermoline is prepared by G. W. Carnrick Co., New York. Canadian agents, J. F. Hartz Co., Toronto.

INDIGESTION.

As long as people will be unwise in matters of diet, just so long will physicians be called upon to treat all forms of indigestion. It therefore is well to consider a remedy which is suitably adapted to this condition. We desire to call attention to Ingluvin for treatment of all forms of dyspepsia. It is a bland preparation of the ventriculus callosus gallinaceous. It has a property of soothing the irritated gastric mucous membranes and re-establishing a normal secretion of the digestive fluids. It has time and again proven itself superior to pepsin. Its prescription is attended with more certain results than pepsin. Whenever pepsin is indicated try Ingluvin. It will give you more satisfaction. Messrs. Wm. R. Warner & Co., Philadelphia, the manufacturers, will send you sample upon request.

NORDRACH AT HOME.

Physicians all over the world are now talking and writing about a noted Sanitarium in the Black Forest, Switzerland, for the special treatment of Consumption, known as the Nordrach cure.

Here Dr. Walthers and his assistants carry out the treatment upon the modern ideas of rest, out of door life, proper feeding and required medication, and the results are wonderfully encouraging, between 70% and 80% of cures in cases not too long neglected.

What a contrast to the old methods of treatment, employed 50 years ago, when nearly every case of Consumption ended sooner or later at the grave.

A Physician who has lately spent some time in this Sanitarium studying these modern methods of treatment, says that wonderful results may be obtained at home with the Nordrach cure.

Proper exercise in a pure atmosphere, generous diet which should include regular doses of Scott's Emulsion of Cod Liver Oil, an out of door life, and plenty of sleep in rooms with the windows open invariably bring about the desired result.

Too much reliance cannot be placed upon this Emulsion of Cod Liver Oil. It contains the best quality of Oil in a finely emulsified condition; it does not separate, and as it is purely mechanical, no change takes place after bottling. It has great

medicinal, as well as food value, as has been proven many times during the past quarter of a century.

Scott's Emulsion, pure air, rest and graduated exercise properly adjusted bring about a marked change; strength and vigor return, the Tubercle Bacille are expelled, the flesh and appetite regained and health restored.

Try this treatment on your next case of consumption in the first stages.

AN IDEAL BLOOD BUILDER.

Clinical evidence has been accumulating for years, going to prove that Gude's Pepto-Mangan is the ideal tonic. Numerous observers the country over have given exhaustive application of the remedy. Prior to its administration the red blood corpuscles were counted and at frequent intervals after the free exhibition of the drug, a comparison of the counts would indicate a rapid increase of the red blood corpuscles. Surely a mathematical demonstration. The proprietors of Gude's Pepto-Mangan have entered into a compact never to introduce it through other than the medical profession, and the drug is entitled to the confidence of the profession, from this fact, coupled with the additional one that the results of its administration have been uniformly satisfactory. Imitation is not only the sincerest flattery but endorsement as well. The numerous efforts at imitation of the Gude Pepto-Mangan that have been indulged in, simply emphasize the importance of the members of the profession seeing to it, that only the Gude's Pepto-Mangan is prescribed for their patients.—*Medical Mirror*.

COCA WINE—MARIANI.

Probably no drug has been more unjustly maligned than erythroxyton coca; yet no drug has really rendered more aid to therapeutics. Of the time of the Incas (twelfth century), long before the discovery of Peru by Pizarro (1524), coca was in extensive use. It rendered the greatest of service as a restorative, a fortifier, a sustainer. It was depended upon to insure resistance to disease, fatigue, hardships or toil. For centuries coca proved its usefulness and merit; it so has continued, notwithstanding the

systematic series of attacks instigated about three years ago by malicious persons who had special interests in endeavoring to bring coca into disrepute.

Mariani, of Paris, was the first to introduce it in Europe and in America in a uniformly reliable and agreeable form, and his labor and serious work in this direction were appreciated by the medical profession. His preparation has become a most formidable rival to the many so-called tonics, restoratives and stimulants.

When it was clearly demonstrated that coca was vastly superior and was being adopted universally by the physician, manufacturers generally hastened to add coca in some form or another to their various mixtures. While this was an admission of the value of coca, it really injured its reputation, owing to the defective preparations produced. The manufacturers had no knowledge of the requisite treatment and preparation of this delicate, probably most volatile of plants—in fact, were unable to procure reliable leaves, there being even a vastly greater variation than in tea.

The well known preparation of coca by Mariani is the only one which has resisted all attacks directed against coca. Introduced to the profession more than thirty-five years ago, it stands without an equal, and continues to be endorsed and upheld by all who subject it to thorough test. It certainly merits the attention of practitioners.

Mariani's coca can be conscientiously recommended; its adoption into practice as an adjuvant in treatment of the innumerable cases where an absolutely reliable tonic, effective but mild stimulant is indicated, will render invaluable assistance. Its field of usefulness will gain for coca in the form of a reliable preparation, as great, or if possible, even greater reputation in the future than it enjoyed at the time of the Incas.

DISINFECTION OF CUSPIDORES.

The State Board of Health of Missouri has issued a notice under the heading of Sanitary Rules, which among other things, announces the following: For disinfecting cuspidores and other vessels Platt's Chlorides are recommended as safe and efficacious in the proportion of one part to eight of water.

INJURIES TO THE SPINAL CORD.

These form a comparatively small part of surgical lesions yet there are few cases where there is not greater unanimity as to the proper surgical course to pursue. The deductions which P. R. Bolton of New York has made from observation of a considerable number of cases are concisely given in the August *Annals of Surgery* and are reproduced below.

(1) Extradural hemorrhage does not give rise to cord lesions or symptoms, and requires no treatment.

(2) Total lesions of the cord are irremediable, because the cells and fibres of the entire thickness of the cord are destroyed, are never regenerated, and are replaced by cicatricial tissue. The lesion thus is permanent and requires no treatment.

(3) In hematomyelia the clot is absorbed; its site persists as a cavity or is filled by newly formed tissue; irregularities of circulation in the surrounding portions of the cord adjust themselves. There may be great amelioration of the symptoms.

There is therefore no therapeutic indication, and no remedial treatment is possible.

(4) In partial contusion of the cord the lesion results in permanent destruction of cells and fibres; disturbances of circulation adjust themselves. Repair is accomplished by cicatricial tissue. No treatment is available.

(5) In open injuries of the cord there are destruction of cells and fibres and disturbances of circulation. In addition, infection may occur or a foreign body be introduced and left in or lodged against the cord, and by its continued presence produce great disturbance of circulation and consequent extensive degeneration and necrosis of cells and fibres. Repair occurs by cicatricial tissue as before.

But here active operative interference is indicated to remove foreign bodies, to facilitate disinfection, to prevent more extensive necrosis, and to facilitate drainage.—*Medical Mirror*.

ANTISTREPTOCOCCIC SERUM IN PUERPERAL INFECTION.

The committee appointed to report to the

American Gynecological Society upon the value of antistreptococcic serum in the treatment of puerperal infection has weighed the evidence very carefully and gives probably very nearly the true present status of that agent. It is unfortunate that value cannot be attached to the use of this serum and the report does not hold out much encouragement for increased efficiency for this serum in the future.—*Medical Mirror*.

WINTER COUGHS—GRIPPAL NEU-ROSES.

That codeine had an especially beneficial effect in cases of nervous cough, and that it was capable of controlling excessive coughing in various lung affections, was noted before its true physiological action was understood. Later it was clear that its power as a nerve calmative was due, as Bartholow says, to its special action on the pneumogastric nerve. Codeine stands apart from the rest of its group in that it does not arrest secretion in the respiratory and intestinal tract. In marked contrast is it in this respect to morphine. Morphine dries the mucous membrane of the respiratory tract to such a degree that the condition is often made worse by its use; while its effect on the intestinal tract is to produce constipation. There are none of these disagreeable effects attending the use of codeine. The coal-tar products were found to have great power as analgesics and antipyretics long before experiments in the therapeutical laboratory had been conducted to show their exact action. As a result of this laboratory work we know now that some of them are safe, while others are very dangerous. Antikamnia has stood the test of exhaustive trial, both in clinical and regular practise, and has been proven free from the usual untoward after-effects which accompany, characterize and distinguish all other preparations of this class. Therefore antikamnia and codeine tablets afford a very desirable mode of exhibiting these two valuable drugs. The proportions are those most frequently indicated in the various neuroses of the larynx as well as the coughs incident to lung affections, grippal conditions, etc.—*The Laryngoscope*.

VACCINATION.

The prevalence of smallpox calls for renewed energy in the matter of vaccination. Lest the operation be a failure, it is well to remember a few points always in danger of being forgotten. Remember that antiseptics is inimical to vaccine. Do not therefore wash the arm with a strong antiseptic, or if an antiseptic be applied rinse the surface thoroughly with boiled water afterwards. For a similar reason do not apply an antiseptic dressing. The most successful vaccinators apply no dressings, and they are only called for if there is danger of other infection from contiguous parts. In scaring do not draw blood. Rub the vaccine thoroughly into the abrasion. Be sure of the vaccine. Exposure to extremes of temperature spoils it. Lymph that has been glycerinated (Parke, Davis & Co.'s.—Ed.) is stated by investigators to be freer from streptococci than other forms. The old-fashioned results of vaccination—sore arms, fever, and constitutional sepsis—must be regarded as the outcome of old-fashioned methods. The modern man is free from these unpleasant experiences. — *Medical Age*.

THE PETROLEUM IDEA.

As far back as Pharaoh's time, petroleum was used to make sick people well, and with larger knowledge and scientific research comes the positive assurance that nothing is better for throat and lung troubles. When properly refined and emulsified its effect is soothing and healing, but there is everything in knowing what oil to use and how to use it.

The best preparation of Petroleum for internal use is Angier's Petroleum Emulsion. In the special process by which it is purified they eliminate all the irritating and nauseous properties of the crude oil with-

out losing any of its medicinal qualities. It is pleasant to take, agreeing with the most sensitive stomach. The combination with hypophosphites makes it a valuable nerve food and tonic.

WIDAL'S TESTS IN TYPHOID FEVER.

[*Texas Clinic.*]

The tests, as given by Widal are as follows: (a) Macroscopical:—The blood or serum to be tested is added either to a young bouillon culture of typhoid bacillus or to sterile bouillon, which is then at once inoculated with the bacillus. In the former case the reaction with typhoid serum appears usually within two or three hours, and consists in clarification of the previously turbid fluid and the formation of a clumpy sediment composed of accumulated bacilli. In the latter case the tube is placed in the incubator, and within fifteen hours the reaction is manifested by growth of the bacilli in form of a sediment at the bottom of the tube, the fluid remaining nearly or quite clear. (b) Microscopic test:—The blood or serum is mixed with a young bouillon culture or with a suspension in bouillon or salt solution of a fresh growth of the typhoid bacillus, and a drop or two of the mixture is examined at once under the microscope. With a dilution of (1 to 10) this microscopic typhoid reaction appears, as a rule, immediately or within a few minutes, and is evidenced by loss of motility and by clumping of the bacilli into masses of various sizes and shapes.

Dr. Thomas Jackson has this to say in regard to the importance of the diagnostic value of Widal's test in typhoid fever: "An extended experience with Widal's test for diagnostic purposes has created in me a confidence in its value."

A subscriber writes to us that "THE AMERICAN MEDICAL QUARTERLY supplies a long-felt want in the profession." That is the general sentiment, though differently expressed, by each writer, of all of our subscribers, as well as the leading medical journals by which THE QUARTERLY has been extensively reviewed. Subscription price two dollars.

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THE NATURE OF THE CANCEROUS PROCESS AND
THE CANCEROUS CACHEXIA, AND THE RELATION
OF LOCAL IRRITATION TO EACH.¹

BY ROSWELL PARK, A.M., M.D.,

Professor of Surgery, Medical Department, University of Buffalo.

OVER one hundred years ago, a great, but in this country almost forgotten surgeon, Peyrilhe, voiced the following sentiment, which is just as true to-day as when he gave it expression: "*Ut cancrum curare, sic eum definire perarduum est*" (*Diss. de Cancro*, Toulouse, 1774). Every pathologist who studies the disease, and every surgeon who attacks it, will concede willingly that in order to cure cancer one ought to know the nature of the disease with which he has to deal; and every modern pathologist will also concede, I think, that oncology, with its kindred subject teratology, constitutes the most fascinating and important field for his labor.

Indeed so important, so difficult, so all-absorbing is the study, that some of us, who live in what I have nicknamed the actual tropic of cancer, succeeded in securing State aid in pros-

ecuting it. Thus it came about that there was organized the State Pathological Laboratory of the University of Buffalo; and thus again, I take it, as one deeply interested in the movement, I have been invited to participate in this discussion this evening. That I may do justice, then, to the subject, as well as to myself, it seems wise to consider some of its clinical and border-line aspects, leaving a demonstration of methods and results to my colleague Dr. Gaylord, the head of the actual laboratory work.

When we deal with the matter and manner of growth of cancer we find that while in the minds of many karyokinesis undoubtedly plays a most important rôle, it is not the sole feature of interest in this connection. Even the abnormalities of mitosis, interesting as they may be, do not explain much of what we must appreciate in order to know in what the disease process consists. Arnold (*Virchow's Archiv.*, 1883-4) has called

¹ Read before the New York Academy of Medicine, February 14, 1900.

attention to the frequency with which may be noted what he calls fragmentation of these tumors, which consists in a more or less regular division and segmentation into small masses or nodules, either with or without multiplication of tumor elements. Aoyama (*Virchow's Archiv.*, 1886) has maintained that these are post-mortem changes, since the figures and changes described by Arnold may be seen in various inflammatory conditions.

Another phenomenon observed by many, to which Klebs and others have attached considerable importance, is that of leucocytic inclusions, *i. e.* the penetration of leucocytes into the interior of the neoplastic cells. This, of course, is a common phenomenon in the infectious granulomata, and receives there a commonly accepted interpretation. No matter what importance there may be attached to it by others, it would seem to me that in a case of malignant tumor leucocytic invasion is equivalent to phagocytic, and can be viewed only in one light, *i. e.* as an effort at protection against invading organisms. The fact that the dead leucocytes are so often found in the tumor mass does not detract at all from the importance of such an explanation. Leucocytic aggregation and infiltration must here be regarded as a reaction from some form of irritation. Its recognition brings up again the constantly recurring question, Is cancer due to intrinsic or to extrinsic causes? Leucocytic invasion, *i. e.* phagocytosis, is practically always a reaction against extrinsic causes. As observed in carcinoma, and even more often in epithelioma, where leucocytes are seen in the interior of the pearly bodies, it is more than a mere reaction against the irritation of foreign bodies;

it partakes of the significance of an active positive chemotaxis.

Surely surgeons generally have not attached sufficient importance to the facts so beautifully elaborated by Cornil and Ranvier, who have shown the wonderful freedom of communication between the minute terminal lymphatics and the alveoli of cancerous tumors. The possibility of lymphatic involvement is, of course, everywhere recognized, but the mechanism of it is not generally made clear enough, neither is the practical lesson to be derived from this anatomical fact.

Metastatic foci seem to evidence predilection for certain organs, depending upon the character of the growth. Certain cancers, for example, generalize themselves mainly through the osseous system, as, for example, in the cases studied by Leusinger (*Die Knochenmetastasen beim Krebs*; Inaug. Diss. Zurich, 1896), who found that in cancer of the thyroid 20 to 25% of metastases were found in the bones, in cancer of the breast about 14% and in cancer of the uterus only about 3%. Aside from the reports of individual cases by different observers, to which I could add several of my own, showing the tendency to osseous lesions in cancer of the breast, it is worth while to note Recklinghausen's statement, that secondary cancer of the bone is particularly common in primary disease of the prostate.

Secondary nodules in voluntary muscles at a distance are very rare, although Handford (*Trans. Path. Soc.*, London, 1888) and Menetrier (*Traite de path. gen. de Bouchard*, Tome III., 2, p. 748), have published cases of muscle involvement after primary cancer of the lung. In sarcoma, on the

other hand, pulmonary metastases are very frequent, as would be only expected on anatomical grounds. Mueller (*Beiträge zur Kenntniss der Metastasenbildung malignen Tumoren*, Inaug. Diss., Berne, 1892) has given us some very interesting statistics gathered from the records of the pathological institute in Berne for the thirty-five years previous to his publication. During these years 623 cases of malignant tumor came to autopsy, of which 521 were carcinoma and 102 sarcoma. Of the former metastases in the lymphatics occurred in about 50% of cases, liver 28%, peritoneum 24%, lung 12%, pleura 10%; while for the sarcomata the lungs were secondarily involved in 40%, the lymphatics in 30%, the liver in 12%.

It is worth while to emphasize that dissemination of malignant elements takes place not only with the ordinary blood current, but sometimes by means of retrograde venous embolism, (Zahn, *Virchow's Archiv.* 1889) for Zahn and Arnold (*Virch. Archiv.* 1891) have both reported instances of this kind, and the latter has provoked it experimentally by producing an excessive degree of pulmonary stasis.

Diffusion of cancer along nerve trunks is also extremely interesting and more common than is generally appreciated. Colomiatti (*Sur la diffusion du cancer le long des nerfs*, Turin, 1876), and Pelliet (*Cancer récidive du sein, propagations aux nerfs de l'aisselle*, *Bull. Soc. Anat.*, 1892) have shown how much of the pain in certain instances of cancer is due to invasion and involvement of nerve trunks by cancerous deposit.

Involvement of surfaces constantly in contact is known to afford frequent instances of transmission of cancer,

particularly of epithelioma; as, for instance, about the mouth, the vulva, etc. Bergmann has emphasized the possibility of cancer from one lip to the other (*Deutsche Med. Woch.*, 1887). Simon and Shattock (*Brit. Med. Jour.*, 1888) and Newman (*Glasgow Med. Jour.*, 1888) have shown how the same thing occurs in the larynx.

Kauffman has seen cancer conveyed to the eyelid from the globe of the eye, and Fenwick has noted its transmission from one surface to another in the bladder. Constant and immediate contact is not always necessary for this purpose, as such lesions about the lip and tongue demonstrate. Further illustration of this kind of transmission are seen in cancer of the stomach, produced by swallowing cancerous vegetations from the esophagus, of which cases have been reported by Cornil, Klebs and Luecke, as well as by Menetrier. Cancer of the esophagus penetrating the trachea has also produced lesions in the lung by the same kind of mechanical transmission, while Schimmelbusch has reported cancerous infection of the lip through the finger-nails of the individual who was handling his cancerous ear. The very great importance to be attached to cancerous involvement of the track of an instrument cannot be overestimated. This has occurred numerous times after tapping the abdomen in cases of ascites due to cancer and in other parts of the body after various other kinds of instrumentation. Moreover, the cancerous elements when introduced into serous fluids seem to find there conditions favorable for their reduplication. Other instances, to which I have already called attention in previous papers, of unfortunate transmission of

cancer from one part to another of the human body, by the surgeon, might also be added, such as the case reported by Claude and Pilliet, where this result followed an autoplasmic operation (*Bull. de la Soc. Anat.*, 1895).

As illustrating the defects of laboratory research in this direction, a very abbreviated list of those who have made various injection experiments and failed to secure positive results would begin at least with Peyrilhe, who, about 1772, injected cancerous juice into the veins of dogs, and thus instituted a series of experiments continued and modified by such eminent pathologists and surgeons as Dupuytren, Weber, Doutrelepont, Billroth, Lebert, Villemin, Tilanus, Klebs, Israel and many others. A list of failures by such eminent authorities proves not necessarily the impossibility of that which they were trying to accomplish, but rather the inutility of the methods adopted by them, as well as the extreme difficulty attending this line of investigation. Other observers, and for the most part much more recent, have obtained varying or questionable success, as for instance, Firket (*Semaine m d.*, 1893), who thus produced sarcomata in a rat which killed the animal in five weeks, or Pfeiffer (*Die protozoen als Krankheitserreger*, 1891), who reproduced melanotic cancer from a primary cancer of the limb of a young girl, or Mayet (*Comptes rendus*, 1893), who used a glycerine extract of a mammary tumor and produced cancerous nodules in the kidneys of a rat, or Boinet (*Marseille m d.*, 1894), who had about the same result. Much more successful, and only so as we appreciate conditions, are those

experiments where malignant tumors have been transmitted from one animal to another of the same species. A number of observers have succeeded in efforts of this kind.

A growth of epithelioma upon lupus has been noted by numerous observers, and has been particularly studied in literature by Raymond (*Ann. de dermat. et syph.*, 1887), and Desbonnets (*Devel. de l' pithel. sur le lupus, Th se de Paris*, 1894). This complication is never observed with lupus erythematosus but only after a true tubercular form, whether of the florid or the ulcerating type, or even after complete cicatrization. Of 90 cases collected by Desbonnets 21 concerned lupus scars, and in all the other cases the lesions were old before the epithelioma began to grow. It is difficult to fix the degree of frequency of this particular complication. Leloir (*Traitt  de la Scrofulo-tuberculose*) put it at 15 to the 1000, while Dubois-Havenith (*Th se de Bruxelles*, 1830) observed it five times in 118 cases of lupus.

In other cases also of tubercular primary lesions besides those of the skin which we call lupus, cancerous alterations may be met as later sequences or, as I would call them, secondary infections. Or they may more rarely appear almost coincidentally.

Syphilitic lesions or their resulting scars may equally be points of departure for these cancers, either on mucous surfaces or in the viscera. They have been observed often in the mouth, upon the penis, the skin, the vulva and the testicle.

Fistulous tracts again, especially those leading inward from the skin, with a gradual downward extension

of epithelium, have been the point of departure for numerous epitheliomata. Borchers (*Inaug. Diss.*, Göttingen, 1891) has reported five cases of cancerous fistula leading down to old bone disease, and Devais has collected 39 such observations, while Guiard (*Ann. des mal. des organes genito-urin.*, 1882) has published two cases of rapidly progressing epithelioma which had formed around old urethral fistulas.

Chronic suppurative otitis media has occasioned epithelioma of the ear in more than one known instance, like those reported by Kretschmann and Marchal (*Thèse de Paris*, 1895), while Mouchet has reported an epithelioma developing around the point of origin of a cutaneous horn (*Soc. Anat.*, 1894).

More common than any of these above mentioned forms are those connected with old scars, especially those so placed that their nutrition is always liable to disturbance. The most common are those produced by burns. I have, for instance, recently lost a patient who had an enormous epithelioma develop over the scapula in the cicatrix resulting from a burn, which necessitated the total removal of the upper extremity. He remained well for some years and then the trouble began recurring at different points in the old scar, and after repeated operations attained a degree of depth and extent which made it inexpedient to go further. He was under my observation altogether six or seven years. Volkmann found that among 164 cases of cancer of the extremity 126 of them were apparently due to previous irritation such as chronic ulceration, cicatrices, etc., all of which occurred where there

had been papilomata or other congenital lesions, while only 27 had appeared without some previous explanation.

In this way I have laid stress upon the predominance of cancer in various parts of the body as a consequence of preceding irritation, such as may be caused by tobacco, disturbed salivation, burns, frostbites, constant slight traumatism, ulcerated epiblastic inflammatory lesions, syphilis, warts, ichthyosis, etc. The frequency of cancer of the tongue after psoriasis is universally acknowledged, occurring, according to Debove's observations (*Thèse de Paris*, 1873) 24 times out of 25 in men, a process quite similar to Paget's disease of the nipple. Moreover, isolated observations in this same general direction all have their own particular value; as, for instance, that of Helferich (*Deutsche med. Woch.*, 1890), who saw cancer of the lip in a fisherman who constantly held some of his instruments in his mouth, and Hulke (*Med. Times and Gaz.*, 1873), who saw cancer in the palate following a local traumatism; or Kronacher, who observed the same thing after injury inflicted by a dentist; while all of us, dentists as well as surgeons, well know the frequency of cancer in the mouth as a result of an irritation produced by diseased and jagged teeth or by collections of tartar (*Deutsche Zeit. f. Chir.*, Vol. XXIX.).

About the vulva also, as about the tongue, trifling but chronic lesions may lead as well to epithelioma, of which many instances could be quoted. The so-called psoriasis uterina is an analogous condition of the uterine mucosa described by Zeller, which has given rise to cancer of the uterus in several reported instances, and it is almost

impossible to think of uterine cancer without thinking of some preceding and favoring lesion, like the use of a pessary, or many other things which will occur to all who reflect upon the subject. Bernard (*Thèse de Paris*, 1895) has reported in one thesis at least six cases apparently due to use of the pessary.

So, also, for the stomach. The relations which exist between round ulcer and subsequent cancer have been considered by many pathologists. In 1848 Dittrich collected 160 cases of gastric cancer, in eight of which he found old cicatrices of ulcers. Lebert (*Krankh. des Magens*) in 1878 reported a similar number of cases. The transformation of ulcer into cancer was particularly studied by Hauser, in 1883, who carefully described the changes in the gastric glands from normal to cancerous type. Heberlin estimates that 7% of gastric ulcers change later into cancer. Rosenheim puts this at 6%. Foreign bodies in the stomach producing traumatic ulcers have led also to the same result, as, for instance, in a case reported by Haslam (*Lancet*, 1889) where a piece of bone was arrested in the colon.

So, too, vesical calculi have produced sufficient irritation to lead to cancer, and there is strong reason to think that lithiasis, both renal and biliary, may produce malignant lesions. Of 48 cases of cancer of the gall-bladder collected by Zenker (*Deutsche Arch. f. Klin. Med.* 1889), in at least 41 of them previous gall-stone trouble could be positively made out.

Over a year ago I had occasion to remove a large cancerous gall-bladder with a considerable adjoining portion of the liver and found two large

gall-stones, the larger of which was the size of a pullet's egg.

In other parts of the body, as well, this same sort of thing is noticed. Friedlander (*Fortschritte der Med.*, 1885), for instance, has seen epithelioma developed around the wall of a lung cavity, and Ohloff has described malignant alterations of the tracheal epithelium, from cylindrical to squamous, under the influence of irritation caused by the presence of the tracheotomy tube. He has, moreover, observed at least one case of epithelioma of the trachea subsequent to laryngeal lesion. Evidently, then, as determined by numerous observers, under the influence of constant irritation, cylindrical or round epithelial cells can assume the squamous type and give rise to squamous-celled cancer.

Moreover, in the respiratory organs we may see numerous examples of the effect of continuous irritation in the development of tumors. Thus Haertling and Hesse have described a form of tumor of the lungs almost peculiar to the miners of the Schneeberg, consisting of lymphosarcoma or endothe-lioma of the bronchial nodes and lungs, which seems to be due to the inhalation of the dust from the cobalt and arsenical ores which they are handling.

There are certain relations which exist also between interstitial nephritis and the formation of adenocarcinoma of the kidneys (Sabourin, Oettinger, Netter, *Rev. de Med.*, 1885), between renal lithiasis and cancer of the kidney (Shattock, Israel, Hartmann, *Progres med.*, 1886), between lithiasis also and cancer of the bladder (Roesen, *Münch. med. Woch.*, 1886), between chronic stricture of the urethra and cancer (Wasserman, *Thèse*

de Paris, 1895), and between lesions of the kidney, pelvis and ureters and the formation of cancer at these points, while Kundrat has described cancer of the renal pelvis following upon chronic pyelitis (*Semaine med.*, 1891).

The liability, also, of benign tumors to undergo malignant transformation is of great importance in these considerations. This occurs more often upon epithelial surfaces, for example, skin, larynx, etc., and is perhaps seen more frequently in tumors of the vascular type, such as naevi. They occur sometimes spontaneously, *i. e.*, without known cause; at other times as the result of irritation brief or prolonged. Indeed, so frequent is this form of degeneration that a few writers believe that sarcoma has an essentially vascular origin. Occasionally the transformed tumor assumes the melanotic type, by which it acquires an added malignity. Naevi, however, are not the only tumors which undergo these changes. Fibroma molluscum, according to Chambard, gives rise to myxoma, while Rindfleisch, Mallassez, Pilliet and others have insisted upon the fact that it undergoes sarcomatous degeneration. Inasmuch as fibroma molluscum has a somewhat variable histological structure, it may present at some times myxomatous, cartilagenous or even bony characteristics, or at others evident malignant changes. The verrucose naevi are those which especially often undergo epitheliomatous changes. Thus, Renoul (*Thèse de Paris*, 1892) collected 121 cases of tumors of all kinds developed from naevi, 34 of which were epitheliomata. Melanotic cancers may also spring from these naevi, but more often have their origin in

those which were pigmented from the beginning. Xeroderma pigmentosa, according to Kaposi and Vidal, frequently changes into epithelioma. Sebaceous cysts and wens, even those of congenital origin, occasionally undergo these changes, Franke (*Archiv. f. klin. Chir.*, 1887) having collected 18 cases of this character.

In the mucous membrane of the alimentary canal similar changes are also observable, as, for instance, in the large intestine there has been observed hypertrophy of glandular structure amounting to polypoid outgrowth and then cancerous transformation of this hypertrophy (Bardenheuer, *Arch. f. klin. Chir.*, 1891). Hauser has described five cases of rectal cancer among 24 which he especially studied, which showed positively the co-existence of cancer and rectal-polyps. The relations existing between cystadenoma of the ovaries or especially ovarian dermoids, and malignant degeneration are well known. These tumors are always of complex type, and seem to be peculiarly susceptible to the influences which determine malignant changes. Orillard (*Soc. Anat.*, 1893) has described myxomatous metastases which accompany certain cases of this general character, while Fraenkel (*Wiener med. Woch.*, 1883) has especially noted the complex character of the secondary growths, which closely imitate the original structures. Uterine adenomata certainly predispose to cancer of the uterus, and co-existence of mucous polyps and of epithelioma is by no means common. Parallel with these epitheliomatous changes are also the sarcomatous degenerations which numerous observers have noted in uterine myomata. Thus, Pilliet and Costes (*Soc. de biol.*,

1894 saw this occur 11 times in 21 cases.

And so one could spend much time and go over the various parts of the body, tracing how in every structure almost similar changes might be observed; as, for instance, in the thyroid, the salivary glands, the prostate, the adrenals, etc., ever coming back, however, to the essential facts above illustrated.

So far as transmission and inoculation from one to another animal of the same species are concerned, successful experiments have been relatively few in number, and yet they have been made abroad by Jeannel, Doutrelepon, Leblanc, Paul Bert, Rinne, Fischl and others. These also are in addition to those that I have alluded to in previous papers. Klencke has transmitted melanotic cancer from horse to horse, and Geissler has also succeeded with dogs in the same way.

Among all the consequences of various inoculation experiments, one should not forget certain phenomena well known to laboratory workers who employ the intravenous method of inoculation, which are seen more particularly among white rats than among other animals, in whom not infrequently, after intra-peritoneal inoculation, and sometimes later, usually two or three months, there occur relatively large nodes, usually softening at the center, accompanied by lymphatic involvement and enlargement both of the abdomen and thorax, and presenting every appearance of true tumor formation. A fragment of one of these masses inserted into the peritoneum of another will reproduce itself, and a series of animals may thus be infected one after the other. In real-

ity these are granulomata of some kind, which show this tendency to softening in the interior, and which furnish from culture media abundant growth of microbes.

The cancerous dyscrasia so universally noted in cancer patients is quite analogous to the dyscrasias which predispose to other infections, and is a favoring cause rather than an unfortunate effect, since it precedes rather than follows many of these diseases. Even if one feels impelled to side with those pathologists who believe in the ineffectivity of epithelial cells, *per se*, we must still acknowledge a susceptibility of certain tissues to their invasion. This cancerous dyscrasia is without classic symptoms, and, in fact, cannot be as yet recognized, as one can recognize, for instance, the dyscrasia which predisposes to tubercle; and above all things it must not be confounded with the cancerous cachexia which, of course, is the result of the presence of the growth. The one is a forerunner; the other a consequence, and the two should never be confused.

In explanation of the latter, many views have been advanced. Some would explain it entirely on the hypothesis of disturbance of nutrition and perverted exchange, or exaggerated destruction of albuminoid materials. Others ascribe it to augmentation of reducing substances in the blood. Some find modifications of the urine upon which they would explain the alterations, as for instance, a diminution of urea, of phosphoric acid and of chlorides. The elimination of urea, however, is affected by too many other incidents to be positively influenced by the presence of cancer. At all events, it is not yet a safe guide to

diagnosis, although, for my own part, and from a series of observations conducted in my own clinic by some of my former assistants, I have rather leaned to the opinion that there is a diminution of urea in cases of cancer which is not to be accounted for by dietetic variations. For most of us, however, the particular cachexia of cancer is to be ascribed to a toxic agent directly connected with the presence of the tumor, whose absorption into the organism produces the evident results.

One must remember that injection of cancer juices into animals has produced most serious disturbance, and is sometimes rapidly fatal; especially so in animals already affected with the disease. The experiments of Boinet and Pfeiffer have shown that infusions of cancer tissue in salt solution produce fever, salivation and even collapse. Freiere has killed birds by injection of cancer juice and F. Mueller has observed that the blood serum of cancer patients more quickly destroys albuminoid material than an equal injection of normal serum. Feltz has found the urine of cancer patients more toxic than normal urine, and numerous other observers have proven the extra toxicity of such urine. Clinically, Gross has observed exceedingly rapid septic consequences, and even that which he calls carcinomatous coma, in consequence of rapid softening of a malignant tumor, and Klemperer has reported two cases of coma in cancer patients strongly resembling diabetic coma. He found a marked diminution of alkalinity of the blood, and discovered the presence of oxybutyric acid in the urine. Adamkiewicz has particularly insisted on the toxicity of cancerous products, maintaining that with these tumors

there is produced a poison analogous to cadaveric poison, which kills animals in a few hours by causing paralysis of cerebral origin, which latter he could even produce by applying to the surface of the brain a portion of cancerous tumor. However, his experiments have been criticised by Hansemann and Geissler, in that he did not exclude in his experiments the ordinary septic accidents.

Enough has been said, however, to show that by numerous competent observers certain toxic phenomena are inseparably connected with the cancerous cachexia.

Bard attributes the cancerous cachexia to the absorption of the products elaborated by the cells of the tumors, which, according to him, amount practically to excess of only glandular secretion. Thus, he would describe the gastric cachexia, the pancreatic, etc. This theory is attractive in certain aspects, and yet probably has but little to sustain it.

"This condition, which is the ordinary cause of death in cancer, unless one of the great vital organs be seriously involved, or an artery eaten across, was for long a great puzzle, until it dawned upon us that the cancer-cell masses, having no ducts or proper excretory channels, were pouring their abundant waste products into the blood and lymph, thus poisoning the entire body, precisely as those vegetable parasites the bacteria do with their secretions or toxins."—Hutchinson.

Truth is, in all probability, that the cancerous cachexia is a complex product of numerous factors, including degenerative products both of the neoplastic cells and of perturbed action of normal cells, and of those accidental

disturbances of important organs which may be the result of mechanical obstruction; as, for instance, pressure upon the biliary passages in cancer of the pancreas, pressure upon the ureters in cancer of the uterus, etc. Moreover, we must not lose sight of the anemia consequent upon hemorrhages or disturbed nutrition, and of the secondary infections, mostly septic, which are likely when the growths are near or upon the surface, including the absorption of ptomaines, etc., under whose constant influence visceral degenerations may easily occur. Furthermore, frequency of renal lesions must not be forgotten, as, for instance, according to Schrader, parenchymatous nephritis occurred ten times in fifty cases of cancer of the stomach. Even this list is necessarily

incomplete; nevertheless, it will show how many factors are to be taken into consideration in accounting for the reduced condition of the cancer patient, which will vary more or less according to the character and location of the tumor, visceral lesions producing them more rapidly than those of the connective tissue, and glandular cancers being probably the most fatal of all.

510 DELAWARE AVENUE.

[Those interested in this subject are invited to read also a paper by the writer entitled "Again the Question of Cancer," read before the Medical Society of the State of New York, January 31, 1900, and published in the *Medical News* for March 3, 1900. It is, in fact, the complement of the above paper which was read before the New York Academy of Medicine February 15, 1900, and the two should be regarded as constituting a single contribution to the subject of cancer.]



TREATMENT OF CANCER OF THE CERVIX OF THE UTERUS COMPLICATED BY PREGNANCY.¹

BY GEORGE BEN JOHNSTON, M.D.,
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IF I am correct in interpreting the motive of our excellent host in inviting me to be present at this meeting of your honorable body, as an expression of his desire to afford me the opportunity of enjoying his hospitality and your good-fellowship, and not as dictated by those considerations which vanity might suggest, then this paper is to be regarded as scarcely more than a mere formality—a passport entitling me to entrance upon these coveted pleasures.

I have selected the subject announced in the title as one in which obstetrician and surgeon must be alike interested. In view both of the increased gravity of cancer of the cervix of the uterus when complicated by pregnancy, and of the many considerations which must, in most instances, be taken into account in deciding upon the proper treatment, there is probably no class of cases which demands greater accuracy in observation, wisdom in interpretation, and skill in management. It has, therefore, been somewhat of a surprise to me to find the question so briefly and unsatisfactorily dealt with in the treatises at my disposal. This was one consideration which influenced me in the selection of this subject.

Aside from this, the subject seemed

to me a most suitable one for this occasion. The condition, whose treatment constitutes the subject of this paper, presents itself to the obstetrician and to the surgeon in slightly different lights—due to their respective points of view—there being just that shade of difference which is conveyed by the terms employed by each in referring to this condition. To the obstetrician it is pregnancy complicated by cancer; to the surgeon it is cancer complicated by pregnancy.

To the one, a normal, physiologic process assumes a new phase from the advent of a serious pathologic condition; to the other, a pathologic condition always grave, but by no means hopeless, is rendered far more serious by the existing physiologic condition. In the solution of the problem presented, the one considers what measures are demanded by the invasion of the pregnant uterus by a malignant neoplasm; the other, what modification of the procedures regularly indicated in the treatment of a malignant tumor of the cervix must be made when the invaded organ contains a more or less completely developed human being. From these considerations, therefore, it would be natural to predict that the obstetrician would be inclined to defer operative intervention to a later date than would the surgeon, and that the surgeon, on his part, would be disposed to grant

¹ Read before the Obstetrical Society of Boston, January 16, 1900.

to the interests of the unborn child less consideration than would the obstetrician.

But the gravity of these cases is such as to demand that in deciding upon the course of treatment each phase of the case should be accorded its proper significance, unbiased by the dicta of any specialty. The position in which I am now placed, as a surgeon addressing a society of obstetricians, seems to me peculiarly adapted to the endeavor to formulate for the handling of these cases certain general, impartial rules, in which full justice shall be done to the claims of both mother and child.

Ignoring the questions of etiology, pathology, symptomatology and diagnosis, let us assume that we have before us a case presenting the condition under discussion. What method of procedure are we to adopt when this fact has been ascertained?

Fortunately conception rarely takes place in the presence of cancer of the cervix of the uterus, the very nature of the disease almost precluding its occurrence. The onset of the cancer, then, is usually subsequent to conception. Since this lesion is most common in women who have borne one or more children, its earlier symptoms are quickly recognized by them as a departure from the course of former pregnancies; alarm is excited, and advice promptly sought. This results in an early detection of the malady.

Because the course of cancer of the cervix when complicated by pregnancy is more aggressive than otherwise, and for other cogent and obvious reasons, its management demands special consideration. In this consideration we are to take into account the precarious

condition of the child, which rarely goes to the full term of intrauterine life; the constant dangers which beset the woman from hemorrhage and infection; and, finally, at labor, rents which may extend into the peritoneum and lead to fatal peritonitis, or, should the cervical canal be occluded or rendered incapable of even moderate dilatation, there is a possibility of rupture of the uterus, on the one hand, or, on the other, the impossibility of terminating the labor without resorting, at last, to surgical procedures. Nor should the grave question of the rights of the unborn child be overlooked.

From the above considerations it is manifest that the well established principles governing the treatment of cervical cancer in general must be modified when pregnancy exists. Our method of procedure will be influenced by a number of factors, chief among which are the extent of the lesion and the stage of pregnancy. On this basis we may divide these complicated cases into three groups, each having its own indications for treatment:

1. *Those cases in which the cancer appears before the termination of the fourth month of pregnancy and remains limited to the cervix.*

2. *Those in which the disease is discovered after the fourth month and remains limited to the cervix.*

3. *Those in which, regardless of the stage of pregnancy, the disease has extended to the vagina, and possibly neighboring structures, rendering the condition inoperable.*

With our cases thus classified, two prominent points are to be noted: (1) In the first and third groups the indications for treatment are apparent,

positive and constant, as contrasted with the second group, in which our method of procedure is variable and can be arrived at in each instance only after intelligent judgment, founded upon the consideration of numerous details. (2) While possessing the above point in common when contrasted with the second group, when compared with each other we find that our first and third groups are exactly opposite in the result sought and in the method of their management. For this reason the indications for treatment can best be brought out by departing from our order of enumeration and considering the third group immediately after the first.

The treatment of the first group of cases—*those in which the cancer appears before the termination of the fourth month of pregnancy and is limited to the cervix*—is apparent. At this early stage of pregnancy no thought of saving the life of the child can be entertained, and our sole consideration must be the welfare of the mother. We are, therefore, to proceed exactly as we would in dealing with a cervical cancer in a non-pregnant uterus. Hysterectomy is to be promptly performed, preferably by the vaginal route. Usually at this stage of pregnancy the uterus can be easily removed *per vaginam*. Should the caliber of the vagina, or the existence of some other obstacle, not admit of this method, total hysterectomy by the high route must be resorted to.

In the third group of cases—*those in which, regardless of the stage of pregnancy, the disease has extended to the vagina, and possibly neighboring structures, rendering the condition inoperable*—the indications, while equally as ob-

vious as in the first group, lead to the adoption of exactly an opposite course and our efforts are entirely in behalf of the child. The disease having reached an inoperable stage, it is likely that the pregnancy is well advanced, except in those rare cases in which the cancer existed prior to conception. In either case the outlook for the mother is utterly hopeless. Our endeavor here must be to sustain her until the end of the term, if possible, or at least until the child has reached a viable age. During this time it is essential that she be kept under closest surveillance; for, in spite of our efforts, intervention may be demanded at any moment on account of exhaustion or hemorrhage or to forestall premature expulsion. If we are successful in carrying the woman to term, the delivery then by natural channel is fraught with such formidable dangers—laceration, hemorrhage, infection, peritonitis—that Cesarean section should always be resorted to as less perilous. Should delivery before term be unavoidable, on account of the exigencies above mentioned, Cesarean section should be performed where there is the slightest chance of securing a viable child, and it is also the only method to be adopted prior to such time, if it be apparent that the passage of even an undeveloped fetal head through the diseased cervix would end in fatal hemorrhage or poisoned wound of the peritoneum.

Our course in dealing with each of the two classes of cases thus far considered was clearly indicated by the conditions, and the unavoidable sacrifice of a life in each instance left us unhampered in our efforts to rescue the other—the mother in the first

group, the child in the third. Coming now to the treatment of the cases included in the second group of our classification,—*those in which the disease is discovered after the fourth month and remains limited to the cervix*—the conditions are more complicated and demand more serious consideration.

Here we recognize the possibility of accomplishing that most desirable object, the saving of the lives of both mother and child, and our efforts should be directed to that end. With these cases our course should be to keep the woman under the closest observation for a time and subject her to frequent examinations. If it is evident, after several inspections, that the disease is progressing with such rapidity that it will advance to an inoperable stage before the child has reached the period of viability, the possibility of saving both lives no longer exists, and that of the child must be sacrificed. Immediate ablation of the uterus is now demanded. In this class of cases the supravaginal route is chosen, and the operation is a Porro, continued to complete extirpation.

If, on the other hand, we find the disease to be progressing but slowly, so that it is plain that the mother's cause will not suffer materially by a few weeks' delay, postponement should be recommended. Should we thus feel justified in deferring operation until the completion of the seventh month, or later, if possible, Cesarean section, followed by complete removal of the uterus, may result in rescue of the child and at the same time accomplish for the mother all that could have been hoped for from an earlier operation. The necessity for the practice of this plan grows more im-

perative as the case approaches the end of the normal period of gestation, so that it becomes a plain duty to give to the child, after it has reached the time of probable viability, as many days of intrauterine life as may be consistent with the safety of the mother.

The responsibility in this class of cases is especially serious. Though at no period of gestation is the life of the fetus to be lightly considered, or sacrificed save from the conviction that the step is necessary for the rescue of the mother, yet the claims of the child upon us grow more pressing as fetal life advances. On this account the mother should, and usually will, take some hazard upon herself for the sake of her unborn offspring.

I wish to append a report of three cases of cancer of the cervix, complicated by pregnancy, successfully treated by operation.

Two of these were of the kind described in the first group of our classification and the other belonged to the second. They are briefly as follows:

CASE I. Mrs. P., referred by Dr. Devany, of Wakefield, Va. Consulted me July 29, 1897. Age, 26. Married seven years. Two children, youngest four years old. Dates her trouble from birth of last child. At this delivery a laceration was produced. Ever since has had more or less trouble, such as bearing down pains, backache, vaginal discharge, sometimes severe itching of external parts. Is now and then melancholy and nervous. All symptoms increased during menstruation.

Menstruation, which had been regular, did not appear the middle of May as expected. The ordinary signs of pregnancy developed in proper order. Believing herself pregnant she was mystified by a constant bloody discharge, on account of which she consulted Dr. Devany. Examination revealed a three and a half months' pregnancy. The cervix was occupied by carcinomatous growth involving nearly the entire vaginal portion. Microscopical findings verified the diagnosis and immediate operation was proposed.

Because of the extensive deposit abdominal pan-hysterectomy was advised, and accomplished on August 5, 1897. Her recovery was quick and easy and she left the Old Dominion Hospital on September 3, 1897.

A recent examination of this patient shows her in perfect health.

CASE NO. II. Referred by Dr. John T. Graham, of Wytheville, Va., and operated on in his private sanitorium.

Mrs. H. Age, 38 years. Has had five children and two abortions in nine years. Youngest child two years old. Consulted Dr. Graham June 17, 1899. He found a large bilateral laceration of the cervix which occurred at her first delivery. Had phlebitis in both legs after birth of last child. Dr. Graham found the cervix much enlarged with great eversion of lips. Menstruation had not been regular and was now several weeks overdue. Medicated tampons were used to reduce size of cervix with a view to performing trachelorrhaphy. Treatment availed nothing. Points of induration began to break down. Rapid ulceration took place and the true character of the disease was quickly made out. Cancer of the cervix was diagnosed, and on July 16, I saw the patient with Dr. Graham, and on the following day complete abdominal hysterectomy was performed. The progress of her recovery was satisfactory until the fourth week after operation, when she developed phlebitis of her left leg and likewise suffered an acute congestion of the kidneys. Her recovery from this point on was tedious.

Finally all symptoms subsided and she is now entirely well.

CASE NO. III. Mrs. B., referred by Dr. J. P. Haller, of Pocahontas, Va., January 17, 1898.

Mrs. B. is 24 years old, married six years, one child five years old. Has suffered more or less ever since the birth of her baby.

Dr. Haller says of her in a letter dated January 9, 1898, "She has suffered greatly at menstrual periods. Menstruation ceased five and a half months ago, since uterus has steadily enlarged. Os hard to reach by examining finger. Through a speculum observed bilateral rent. Anterior lip much enlarged but smooth; posterior lip everted and covered with granulations which bleed on slightest touch." I examined this patient January 17 and found all that Dr. Haller has described. A diagnosis of cervical cancer complicated by pregnancy was given. This was verified by the microscope.

In view of the facts that her general health was superb, the disease was just beginning around the os and was limited to a very small area, and that the pregnancy had advanced to the middle of the sixth month, it was determined to postpone operation, hoping to rescue the child later on.

Dr. Haller kept a close watch on her until March 13, when she returned to the Old Dominion Hospital. It was plain that the disease had made advance, and as the child was considered viable, being now well on into the seventh month, Cesarean section followed by complete extirpation of the uterus was done on March 22. The child was extracted alive and received the rite of baptism immediately on its removal. It survived two and a half hours.

This patient made an unusually easy recovery and returned to her home four hundred miles away on May 3, 1898.

I had opportunity to examine her August 18, 1899, and found her absolutely well.

407 EAST GRACE STREET.



THE INDICATION FOR AND THE ELECTION OF OPERATION FOR UTERINE MYOMATA.¹

BY EDWARD J. ILL, M.D.,

Newark, N. J.

THE title of this paper will indicate that the writer has not yet reached that point where myomata, as such, are an indication for operation. Nor has any argument been advanced thus far to let him believe that such a condition will ever be reached. He is well aware, however, that the number of abdominal surgeons who will allow a myoma to pass without holding up to the victim all the possible horrors of her affliction are gradually decreasing.

The patient's personal welfare should be our only guide. With such a view of the matter it will easily be understood that the indication for operation must be other than the simple presence of the tumor. The growth is essentially a benign one. The myoma, as such, is rarely the cause of a bad prognosis. It is always the accompanying symptom. In other words it is not the myoma that forms an indication for operation, but its symptoms.

The writer has yet to see a patient die from a uterine hemorrhage, but he has seen them die repeatedly from a slight intercurrent illness, one that would scarcely make an impression on a healthy person. The indication is of a less severe type now than it was ten years ago, because the results of the

operation are more satisfactory. We know more of the life history of these tumors now than formerly, and can conscientiously suggest operation for that reason when formerly we were at sea.

There are three groups of cases which present themselves to the writer for the consideration of the operation : (1) Those in whom life is, or might be, endangered directly or indirectly by the growth. (2) Those in whom health is so impaired that life becomes a burden, yet is not endangered. (3). Those in whom mental conditions suffer from the fact that they are aware of having the tumor.

Under the first heading we may class :

(1) *The bleeding myoma.* This probably forms the most frequent indication for operation. The important question immediately presents itself: How much of a flow can a given patient bear without impairing her health? This varies in different individuals. The writer knows women who soil twenty or thirty napkins and lose several clots during a single menstruation, yet remain the picture of health. There are others who look waxly with a smaller loss. While the former presents herself as a doubtful subject for operation, the latter demands it most urgently. It is not, however, the quantity of blood lost that must be taken into consideration, but the

¹ Read by invitation before the Gynecological Section of the Buffalo Academy of Medicine. February 27, 1900.

location of the tumor producing the bleeding.

A bleeding tumor distinctly submucous is sure to be of more rapid growth and more dangerous in other regards than an interstitial or subperitoneal growth. Thus also are all tumors situated low down in the uterus, and especially in the cervix, proper subjects for operation both on account of the greater vascularity of the capsule and for other reasons to be spoken of later. Symptoms referable to the heart as caused by excessive flowing form an important and very distinct indication for operation.

The *septic or sphacelated myoma* forms the most stringent and urgent indication for operation. The patient hardly has a chance for life without it. Such a septic condition often follows a maltreatment by curettage, Apostoli's method or probing with soiled instruments. The writer has seen it produced by infection from an adherent ulcerated bowel. Most commonly, however, it is caused by distinct contamination through the vagina of an eroded or ulcerated surface of the tumor.

(3) In the *pressure producing tumor* we again have a relative indication. The tumor located in a retroflexed non-replaceable uterus forms an unquestionable subject for interference. The same can be said of a pedunculated tumor incarcerated in the hollow of the sacrum, or a tumor growing into the broad ligament producing pain and disturbances of the bowel, bladder or ureters. Even if the pain were bearable the danger in the future must at the present time form the important indication.

(4) The growth which becomes *strangulated by torsion or impaction*

demands early and prompt attention whenever such a diagnosis is made. There is always some chance of the tumor being relieved when torsion is moderate, but such circumstances must be rare when a tumor, heretofore freely movable in the abdomen, has become impacted in the pelvis.

The writer would urge immediate operation of the tumor strangulated by torsion since the hemorrhage which takes place into the tumor might become a factor that would increase the possibility of sphacelation and deadly peritonitis. Thus far he has never had a chance for such interference and death must be rare from this cause. He has, however, several times removed tumors the seat of much pain that were fixed by adhesions produced by torsion. The interesting conditions produced by torsion and impaction have only been studied during the past few years.

(5) *Extensive and recurrent inflammatory diseases of the appendages* becomes an important subject for operative consideration from the fact that we never know when a general peritonitis will be the result. It matters little what the cause of the inflammation may be, our duty toward our patient should be plain.

(6) *Myomata in the pregnant uterus.* The indication for operation in these cases is at times an exceedingly difficult one to determine. We must always consider the life of the fetus, and this should not be sacrificed without due consideration. Few will practise induced abortion or premature delivery, and as it is irrelevant to the subject of this paper the writer will pass it over.

When we have taken pains to observe pregnancies in the myomatous

uterus we soon come to understand that, in the vast majority of cases, they form no serious complication neither during gestation nor labor. In a paper recently published the following may be read: "Delay until viability of the child may be possible at an increased risk to the mother."¹ This is most certainly true of a few, but only a very few, cases. The operation previous to the viability of the child demands either intolerable suffering on the part of the mother or absolute danger to her life. When we consider the last we must assure ourselves that an operation in the early months offers less risk to the mother than at term.

In our consideration we must not forget the very great changes that take place in the location of the tumor as the uterus rises and the cervix retracts. Tumors low down will rise out of the pelvis and little or no disturbance will be occasioned at the time of labor. In one case the writer has seen a tumor distinctly cervical, its greater part situated in the supravaginal portion, entirely retracted above the brim of the pelvis two weeks before labor.

The writer has seen between twenty-five and thirty cases of pregnancy complicated by myomata and deemed it wise to interfere but twice. Since then he has learned that in one case more wisdom would have been displayed had he deemed it otherwise. In several cases he has seen tumors retract during the last months of pregnancy when preparations for Cesarean section were already thought of.

Tumors situated entirely in the intravaginal portion or forming large polypi will demand operative interfer-

ence. As to the question of when, opinions are still divided. The only mishap the writer has ever had in this line was when he removed a polypus in the fourth month and abortion was promptly ushered in. The removal of the polypus should have been delayed until just before labor. Pedunculated or severely adherent tumors in the cul-de-sac of Douglas will form serious complications to labor and should be dealt with by operative interference. Neither the shape of the tumor, its consistency, nor its rapid growth during gestation, need concern us much. Other conditions need our close attention however. Among them are continued and dangerous hemorrhages, peritonitic symptoms as produced by torsion or pressure, incarceration of the uterus under the promontory of the sacrum, and purulent degeneration of the tumor.

(7) *Myomata in young women under thirty years* form a conditional indication. We know from experience that the growth at this time of life is usually rapid. It will behoove us to consider each case separately by repeated and careful measurements. They should be conducted at intervals of one or two months, assiduously recording the results, and whether the measurements are made before, after or midway between two periods. When it is discovered that the tumor grows, it still remains a question of how much. Many remain at a standstill, or grow so slowly that it takes years before an increase in size becomes appreciable.

(8) *Doubtful diagnosis.* While this must form a rare indication it will be absolute so soon as all means fail at a diagnosis and no chance should be taken under the circumstances. Cases

¹ Rosenwasser: *American Journal of Obstet.*, November, 1899, p. 610.

of doubtful diagnosis are most frequently those that call for operation on the ground of very grave dangers.

(9) *Attacks of peritonitis or inflammation of the tumor.* Likely the most frequent causes of peritonitis due to myomata are torsion and inflammatory softening of the growth. In either case, if the attack is light, we may allow the acute stage to pass, but should prevent a second attack by early operation.

(10) *The location of the tumor* forms an indication which should ever be borne in mind. A tumor, low down or filling the cul-de-sac of Douglas and raising the cervix high up under the pubes, or growing into the folds of the broad ligament, or a submucous tumor of such nature as to forebode hemorrhage, should be worthy of our early attention. If, however, no subjective symptoms at all are produced, we may tarry and keep our patient under observation. Subperitoneal or intramural tumors of moderate size without subjective symptoms should not be touched with the knife.

(11) *Suspicion of malignancy.* Fehling (*Hegars Beiträge zur Geburtshilfe und Gynaekologie*)¹ reports but nine malignancies in 409 cases of myomata—a little over 2%. The writer has seen but one case of malignancy where a myoma has been previously diagnosed. Any change in the consistency of the tumor or extraordinary rapid growth must be considered a suspicious symptom. A growth of exceeding rapidity does not always mean malignancy, but possibly cavernous or lymphatic degeneration, or hemorrhage into the tumor. It will be eminently proper, therefore, to

operate when such suspicions are fairly well founded, but it would be unworthy of the physician to hold this possibility up to the patient. Any woman can be scared into operation by the word cancer.

(12) *Excessive serous, mucus or mucopurulent discharges* form a strong indication for operation. These symptoms are exhaustive. The patients are usually large bleeders and subject to septic infection, not to speak of the very great annoyance caused by the irritating quality of the discharge.

(13) *Severe uterine contractions* at the time of menstruation producing a presentation of the tumor at the os externum and thus, likely, a septic infection, should also be considered proper cases for operation. This condition occurs frequently in even very large growths and forms an explanation for many of the septic tumors. An examination during the first and second days of menstruation will often reveal the condition just described. One would little suspect this condition when an examination is made during the intermenstrual period.

(14) *Tumors growing after the menopause* are so exceedingly rare that but few observers have noted them. Personally the writer has never seen such an occurrence. A certain observer has taken just one month to verify the increasing growth, and then no microscope proved its character. At times the observation has been left entirely to the patient. One can barely escape being suspicious that such a growth contains a malignant germ, and for this reason extirpation is strongly indicated.

(15) *Inversion of the uterus due to myomata* should receive surgical relief when the condition produces subjec-

¹ Band 1, Heft 3.

tive symptoms, as it usually does, since the condition is an eminently dangerous one.

Under the second heading we may consider those where—

(1) The *size* of the *tumor* has become large enough to prevent proper exercise. Little more than this can be said. Such patients usually demand relief and with perfect right. Tumors of less than fifteen pounds rarely produce such disturbances unless they cause pain and then come under another heading.

(2) Tumors of *excessive mobility* often produce no end of suffering or annoyance from the fact that they occasion insults to the other viscera of the abdomen by their blows. The pedunculated tumor should be classed under this heading.

(3) The *pedunculated tumor adherent* to the mesentery, bowel, or bladder by long thin adhesions, produces much distress and is a proper subject for operation.

(4) *Inflammatory conditions* of the *appendages* of a *mild type* will often be the cause of constant pain and uneasiness. Palpation of the appendages and their great sensitiveness will lead us in the proper direction.

(5) *Excessive menstrual pain* as shown in those cases in which the flow becomes obstructed for the time being. This is especially the case when the tumor is situated low down in the uterus, or where an intramural tumor is changing into a subperitoneal or submucous growth.

(6) *Pain in general.* One frequently sees myomata of small size, not above one or two centimeters in diameter, producing excessive pain. The writer thinks he has seen these most frequently in the uterus previously inflamed. In many cases of this

kind the whole uterus is excessively sensitive and there is an old history of uterine difficulty and sterility. Reflex disturbances are not uncommon in these subjects.

Under the third heading we have cases that almost always demand an operation.

(1) Those *sensitive* and usually *unmarried* women in middle life with growths large enough to cause *unpleasant comment* are made exceedingly happy when the surgeon has relieved them of their burden.

(2) The woman whose *mental condition* is such that she *harps* as to her condition and thus becomes predisposed to melancholia.

(3) The woman who cannot separate in her mind the *idea of a tumor* from a *cancer*.

The contraindications are—

(1) When the patient is *unaware* of having any growth or any symptoms therefrom.

(2) When the patient *discovers* the *growth* but suffers neither *mentally* nor *physically*.

(3) When the symptoms are of *minor importance*.

(4) Those who *can nurse themselves* suffer little, are near the menopause and can afford to be carefully watched. These patients can be made perfectly comfortable by the use of abdominal supports, proper clothing, food and hygienic surroundings.

(5) Women *beyond* the *menopause* with old and likely calcareous tumors producing few if any symptoms.

(6) Women *near* the *menopause* who can remain under observation and may safely be carried beyond by the many means at our disposal.

(7) Women suffering with other *more serious diseases* and likely to lead

to fatal results. Among them must be counted especially phthisis, chronic Bright's disease of advanced form and not depending on pressure on the ureters, real valvular disease of the heart not depending on uterine hemorrhage and the turbulent insane.

Having placed before myself in as concise a fashion as I am able that a given case requires operative interference, the next step to decide will be the choice of operation. The writer has little sympathy with the so-called palliative operations. Many of them, like ligation of the uterine arteries and the galvanic current, seem to him unworthy of note. The curette, although admissible, is at the same time a dangerous instrument.

Our judgment in regard to the conservation of the uterus should first be consulted in every case. Will it be possible to save the uterus, ovaries and tubes intact and remove the offending object? The conservation of normally functioning genitalia should be aimed at by all means. The more careful the examination previous to the operation in regard to palpation of the round ligaments, tubes and ovaries the more likely we can start out with the intention of removing the tumor only. The removal of the tubes and ovaries can be called neither palliative nor conservative. It frequently cures all symptoms, but on account of its uncertainty has gradually fallen into disuse. The writer has done the operation twice at the request of the patient and both times with the most gratifying results. His experience with the reverse, namely the conservation of the ovaries, has not been the pleasantest. In two cases he was obliged to remove ovarian tumors within a year or two after removal of the uterus. That surgeon

will prove the most successful and receive the largest measure of satisfaction from his work who strictly follows surgical principles, and who does thorough work. He who changes his methods with every vagary of surgery soon becomes discouraged, even disgusted.

It is not the writer's intention, nor will time permit, to follow the various operators in the more or less intricate technique of their operations. He will simply outline that which in his hands has given the best results and which compare well with other operators. We may proceed either *conservatively* or *nonconservatively*. Conservatively we may select the *vaginal* or the *abdominal* route.

Under the vaginal we should consider as absolutely conservative the pedunculated fibro-polypus already born into the vagina and not complicated by other myomata in the uterus. We should also consider as absolutely conservative those cases which present themselves in the partial inversion of the uterus. The writer has always succeeded in a conservative fashion in these cases. As conditionally conservative we should look upon the submucous myoma situated low down in the uterus of sufficiently small size to be broken up, enucleated and delivered through a dilatable cervix or a dilated and incised cervix.

The incision into the cervix should not be carried above the duplicature of the peritoneum in the anterior cul-de-sac. The conditional point of the conservative operation would be the slight mutilation of the uterus and the very complete removal of the tumor. The same limitations should be placed upon intramural and subperitoneal myomata. These two forms would therefore very rarely call for a surgical

conservative operation by the vaginal route at the writer's hands.

By the abdominal route we have to consider simply one form of conservative operation, namely, incision into the tumor, enucleation and suture of its bed and peritoneal covering.

But as the vaginal route has its limitations so has the abdominal. By the abdominal we should not attempt to remove too many growths, else the uterus may become too crippled an organ. We should not attempt, or speedily give up as an impossibility, to remove the cyst-ademoma, the cystomyoma and the adeno-myoma. Fortunately their location as taught by von Recklinghausen¹ gives us an early hint in the avoidance of this form of tumor for this kind of operative procedure. According to this very learned observer, they most frequently occur in the posterior lateral wall of the uterus and in the cornua. Being congenital they are said to be derived from the Wolfian bodies. While tumors of this character do occur elsewhere, they are much less frequent. Their intimacy with the uterine wall precludes their enucleation.

Among other counterindications are diseased adnexa and extensive adhesions, leaving large raw surfaces denuded of peritoneum.

A wound of the endometrium has not been a counterindication with the writer nor has a pregnant uterus. Of course one will not operate on the pregnant uterus unless the indication for operation is very decided. Thus the writer was obliged to remove a sixteen pound tumor from the posterior wall of a pregnant uterus; it

was done, however, without interfering with gestation. This woman has given birth since to a second child. The operation of abdominal enucleation of myomata has given the writer the greatest satisfaction and the very best results. It seems to him, however, that not too much should be attempted in the direction of removing an unlimited number of growths, nor should one attempt to remove many tumors when it was previously noted that the uterus was very painful to the touch. Large intraligamentous tumors are not proper subjects for conservative operations.

For the nonconservative operation we, likewise, have two routes, the *vaginal* and the *abdominal*, and may, by a combination, do an *abdomino-vaginal operation*.

The vaginal route should be our choice: (1) When we have decided that *conservation* of the *uterus* is *impossible*. (2) When the tumor is *freely movable* above the *linea terminalis* of the pelvis and can be easily *pushed* into the *cavity* of the pelvis. Tumors of larger size than that demand removal by the abdomen. (3) When the vagina is *wide enough* for *easy* and *comfortable access*. The writer has been much opposed to deep vaginal and perineal incisions. The only excuse for such incisions is in the very fat woman with a small tumor and which would be more difficult and more dangerous when attacked from above.

(4) When there is *complete chronic inversion* of the uterus with myomata. The writer has placed this under the head of nonconservative operations, because he is of the opinion that in *complete* and *chronic inversion* the enucleation will rarely succeed. His experience amounts to but one case and that one could not be enucleated.

1 V. Recklinghausen Die Adenomyome und Cystadenomyome der Uterus und Tubenwandung, ihre Abkunft von Resten des Wolfischen Körpers, 1896.

By the abdominal route we have the choice between—(1) the *total extirpation* and (2) the *supravaginal amputation*, and again the supravaginal amputation may be one where we drop the stump or fasten it into the abdominal wall.

The writer is not partial to total extirpation. It is indicated in all cases where malignancy is suspected, and when the tumor is situated in the corpus as well as in the cervix, and, lastly, in severe diseases of the cervix, be it even an extensive laceration, granular erosion, or cystic degeneration.

Although he has operated in that way many times he can only see in it a disadvantage as compared with supravaginal amputation. The operation lasts longer. A serious consideration is the greater loss of blood in the anemic woman. There is more likelihood of contaminating the wound from the vagina. It necessitates a longer exposure of the patient to the Trendelenburg posture. The last is by no means an argument to be underrated. The shorter the time for the Trendelenburg posture the better for the patient.

Although the writer holds no high opinion of statistics it has been pretty well shown that the results of total extirpation are not so good as by supravaginal amputation, even including the few cases of carcinoma of the cervix following the latter. Supravaginal amputation with dropping of the stump offers many advantages. The operation, even in severe cases, can be done quickly and with very complete hemostasis. The Trendelenburg posture is rarely necessary and then for a few minutes only. The cervical canal is completely closed by catgut suture. The stump can be cut

in such a way that the suture will bring together opposite surfaces and the whole covered with peritoneum, leaving absolutely nothing in the peritoneal cavity except a running catgut suture. After the toilet of the peritoneum it is scrupulously clean. The ultimate outcome has been, in the hands of the writer, as excellent as the immediate result. He has never seen ill effects from leaving the cervix.

So far as the writer is aware, but eight cases of cancer of the cervix have been reported as following supravaginal amputation. The difference in the death rate between supravaginal amputation and total extirpation outweigh by far this rare accident. Little can be said as to the method of operation. It must remain a matter of choice. The writer prefers the method described by Kelly, though he has practised that of Zweifel occasionally since a visit to Leipzig in 1894, and can see many good points in it.

Supravaginal amputation with fixation of the stump in the abdominal wall by pins and *serre-neud* or rubber ligature still has its place in abdominal surgery, though it is becoming more and more restricted. In the writer's own work it is used only for the septic uterus in the very anemic patient. It has the advantage in this class of cases of being done very quickly and in such a way as to preclude infection of the peritoneal cavity. After the pins and rubber ligature are applied, the peritoneum is fastened below the ligature to the stump and the abdomen closely sutured before any attempt is made to sever the tumor above the ligature. In this way we can feel absolutely sure that the cavity of the peritoneum has not been contaminated by the septic contents of the uterus.

THE RELATION OF PREGNANCY TO NERVOUS DISEASES.

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THE relation of pregnancy to nervous diseases must be studied in two ways, namely, the effect of pregnancy upon already existing nervous disease, and pregnancy as a cause of nervous disease.

Epilepsy has perhaps been studied as carefully as any disease. Its literature is abundant. Nowhere have I seen it proven that pregnancy has any effect upon the disease itself. It is a common belief with the laity, and indeed with some few physicians, that an epileptic girl may be cured by pregnancy. Because of this belief, it is not infrequent to have the mothers of epileptic girls seek the advice of the physician as to the advisability of marriage as a therapeutic measure. Leaving aside all question now of the liability of the disease to appear in the child, I consider solely the effect of pregnancy upon the epileptic.

As a rule, patients are made neither better nor worse. It is true, that cases have been reported in which the attacks ceased during pregnancy, but they usually recurred after the birth of the child with the same frequency and severity as before. Therefore, let no man delude himself that marriage of an epileptic is safe or wise counsel.

In my experience, however, I have had one patient who was epileptic for ten years before marriage, who had convul-

sions at irregular intervals. She had four children. During her four pregnancies she never had convulsions, and since the birth of the fourth child, which occurred in 1892, she has had no recurrence of the attacks.

This case is interesting, but has never had any influence with me in advising marriage as a cure. On the contrary, many cases have been reported in which the convulsions occurred more frequently and were more severe during the period of gestation. Such a case was reported by Terillon in *Annales de Gynecologie*, June, 1881. The patient had had epilepsy since her seventh year. At puberty her attacks became periodic, always recurring two or three days before menstruation. She became pregnant twice. During both pregnancies the attacks occurred several times daily and they were more severe in character. The record shows that during pregnancy she had more attacks than at any time after the delivery.

Pregnancy has been observed as a cause of epilepsy several times. Gowers reports seven cases in which the first fit occurred during pregnancy, no other cause being ascertained. He also records five cases in which the first attack occurred after parturition.

CHOREA OF PREGNANCY.

Years ago, it was the teaching that chorea of pregnancy was a disease

much to be dreaded. The mortality was described as high. Latterly that opinion has been modified and many cases have been reported of chorea occurring during pregnancy without interfering with the normal progress of gestation. Chorea has been observed in pregnant women both married and unmarried. Indeed, it is a matter of doubt if the fact of marriage has much to do with the fact of chorea.

The disease usually appears in the first five months of gestation and does not differ from the disease in childhood. Rheumatism and fright are frequently observed as predisposing causes. Many cases of chorea occurring during pregnancy have a history of previous attacks of chorea during childhood. Cases should be treated as ordinary chorea. The question of abortion in these cases should never be considered simply because chorea exists. Such a procedure is entirely unjustifiable unless the patient's condition otherwise demands it.

The chorea may terminate during pregnancy in from ten to sixteen weeks, or it may persist to the time of delivery. Different writers have reported their results in chorea of pregnancy with very differing conclusions. Thus, Wharton Sinkler has had fifteen cases of chorea of pregnancy and not one fatal result. Barnes reported fifty-six collected cases in the *Transactions of the London Obstetrical Society*, 1889. Of these fifty-six cases, seventeen were fatal. Church is of the opinion that chorea may cause premature birth and abortion. He also expresses himself as believing it to be fatal in 20% of the cases.

Gowers states that the chorea of pregnancy is fatal in 20 to 25% of the

cases and then goes on to say: "But even in these cases death seldom results directly from the chorea; it has usually been due to the effects of delivery or abortion in the cachectic state of the system."

My own experience with chorea of pregnancy is limited to four cases. In each case pregnancy went on to full term. The mothers all recovered; three children were born alive and well; one child was stillborn. One of these patients had one of the most violent attacks of chorea I have ever seen. Some of the muscular spasms were so violent as to rupture small blood-vessels, causing hematomata. This patient however recovered and was well at the seventh month of the pregnancy, the chorea having lasted five months.

All of us have opinions based largely upon our experiences and in spite of the statistics of others. So that in spite of the collected cases of Barnes I am of the opinion that chorea gravidarum is not by any means the fatal disease which many writers would have us believe and that the necessity for producing abortion in these cases will seldom arise.

DIABETES.

The relation of this disorder is interesting, in that it has been observed to occur during successive pregnancies and the patient be absolutely free from diabetes during the intervals. Matthews Duncan in his study of diabetes and pregnancy, cited such a case. In the diabetes of pregnancy it is noteworthy that coma has seldom developed. In Matthews Duncan's study of 22 pregnancies in 15 women in Vol. xxiv. of "*Obstetrical Transactions*," he found that of the 22 preg-

nancies four were fatal. They died in collapse, not in diabetic coma.

Pregnancy as a cause of diabetes mellitus has been observed many times, indeed, Jaggard, in "Pepper's System," states that "it is a clinical fact that diabetes mellitus appears more frequently in the pregnant than in the non-gravid woman." This conclusion is unsubstantiated by my own observation and research.

TETANY.

The relation of tetany to pregnancy has been observed many times in Europe, less frequently in this country. It may come on during the early months of pregnancy, but it is more liable to develop in the latter half of gestation. It is more liable to occur in those who have had the disease before marriage. It may occur in several successive pregnancies. Thus, Osler reported the case of a woman aged 33; married at 18; first child born at 19; at 21 while three months pregnant with the second child, she observed that her hands would ache and get stiff two or three times a day. These symptoms continued until within a short time of her confinement, when she improved. Nine days after labor they returned with increased violence. Both hands and both feet were involved in cramps which, however, were not very painful. In her third pregnancy she was free from cramps until the sixth month. She then had them daily for the rest of the term of gestation. In a fourth pregnancy, which followed in a few months, she had no cramps till the sixth month, when they recurred as before. She had a very severe attack while in labor. She had a fifth pregnancy in which the spasms oc-

curred during the entire period. In her sixth pregnancy the attack returned severer than ever and this time she had spasms of the larynx. A seventh pregnancy was marked as the others had been by tetany.

After confinement, tetany has often been observed in nursing mothers. So frequently was this noted by Trousseau that he proposed to name the disease "nurses' contracture."

My own observation of tetany in pregnancy has been limited to one case. An Italian woman presented herself at my clinic in the University of Buffalo. She had marked carpopedal spasm which was increased by pressure over the arteries supplying the leg or arm. She was nursing an infant a month old. She herself was badly nourished. She made a prompt recovery with an improved dietary and with the friendly aid of a neighbor who nursed her baby for her.

NERVOUS DIARRHEA.

In a series of 3,674 pregnancies in the Turin Maternity, nervous diarrhea was observed in thirty-five cases. It begins about the fifth month and may continue to the time of confinement.

EXOPHTHALMIC GOITRE.

The relation of this disease to pregnancy has been but indifferently studied. Many of the writers of textbooks make no reference to the subject. Thus, Gowers simply says: "In many cases the first symptoms have shown themselves after childbirth in abortion. It seldom develops during pregnancy." During pregnancy improvement in old cases is sometimes observed. Ross observes that, "in some few cases pregnancy appears to have had a favorable influence on the

course of the disease. Usually, however, the symptoms become gradually worse."

Dreschfield and Charcot have both observed that patients with exophthalmic goitre usually improve markedly if allowed to go to full term. Klopatski, in the *Revue Obstetricale et Gynecologique*, reported in 1893 a case of exophthalmic goitre in a woman in whom at the seventh month of pregnancy such a marked increase in the size of the tumor occurred as to cause fears of asphyxia. Delivery took place normally after which the tumor rapidly diminished.

Trousseau, in his *Clinique Medicale*, details the case of a Grecian woman who developed symptoms of exophthalmic goitre in the first month of pregnancy. The symptoms increased during the entire period of gestation. After the accouchement the symptoms subsided under treatment which before then had been ineffectual. He was of the opinion that existing exophthalmic goitre was often cured by the establishing of the pregnant state, and that in other cases the goitre diminished when menstruation was again established.

From studying the literature I feel that there is still need for more reports and further investigation of the effect of pregnancy upon previously existing exophthalmic goitre, and upon pregnancy as a direct cause of the disease. My own experience is negative, as I have never had a patient with this disease in whom pregnancy existed.

HYSTERIA.

Hysteria, like epilepsy, has been caused by pregnancy. In a small percentage of cases, hysterical symptoms of long standing have disappeared

during pregnancy. The rule, however, is to find that hysteria is much increased in severity by pregnancy. There is, however, no tendency in the hysterical to premature labor.

INFLAMMATION OF NERVES AND CORD.

Thus far I have considered the relation of pregnancy to the functional nervous diseases. There still remains the consideration of inflammation of the nerves and the spinal cord, of puerperal origin. There has been considerable research of late given to peripheral neuritis in pregnancy.

Elder, in the *Lancet*, reported in 1896 two cases of undoubted peripheral neuritis; both came on in the sixth month. In both the hands were affected. The symptoms were mainly sensory—shooting pains and the feeling described as pins and needles. There was no paresis, but there was lack of fine coördination due to the loss of sensation. In neither case was he able to discover any cause other than pregnancy for the neuritis. In both cases recovery began immediately after delivery. He considered the neuritis to be toxemic in origin, but he was unable to determine the nature of the poison.

Cases of fatal neuritis of pregnancy have been reported, although such a termination is rare. Mills, in 1893, quotes the cases of Dr. Anna M. Fullerton. Her experience with cases of paralysis and pseudo paralysis during the puerperium led her to the conclusion that partial paralysis in general is short-lived; that paralysis of the rectum and sphincter, from long continued pressure of the head upon the floor of the pelvis, sometimes persisted a week or ten days. Mills, himself, discussed the general subject of

neuritis following labor under five heads.

TRAUMATIC PERONEAL NEURITIS.

He reports three cases of his own and summarizes four cases of Hünermann's. In all the cases there was recovery from the neuritis, but persistence of paralysis. Sacral and sacro-distal neuritis without true paralysis is the title of Mills' second group of cases. The third class of cases, puerperal neuritis due to septic or other infection. Such cases have occurred during pregnancy and before labor. The observers have attributed the condition to auto-infection. This septic neuritis may be isolated or multiple. Most of the cases have occurred in the first, second or third week after labor, although, as Mills says, they may follow immediately or at a later period than three weeks.

Reynolds, in 1897, reported 49 collected cases of puerperal neuritis, excluding all cases caused by forceps or exudation into the pelvis. He found the disease more common in multipare. One-fourth of the cases were during pregnancy. In one-third of the cases there was sepsis. As a rule the disease began in the legs; later the arms were invaded. In 22 cases recovery was complete. In 14 cases there was no recovery. In 13 cases no mention was made of the result.

PUERPERAL MYELITIS.

This condition has been observed as a result of septic infection. Mills reported one case of transverse myelitis with persistent paraplegia. Just after her first labor she became paralyzed in both legs. I have at present a patient with the following history: An American woman, married, aged

25. Three years ago, one month after confinement, she noticed that she had difficulty in walking. An examination showed exaggerated patellar reflexes and ankle clonus. There was great weakness of muscles. Sensory symptoms were delayed and there was blunted sensation in the lower extremities. In the last three years she has improved but has not recovered. At present she walks without a cane but has a marked spastic gait. I have been unable to get a good history, but no cause other than pregnancy can be found for her symptoms, which are evidently those of myelitis.

Imbert Goubeyre in a thesis, *l'Acad. de Med.*, 1801, reported nineteen cases of paralysis in pregnancy, albuminuria being present in all. Darcy, in his thesis at Paris, 1877, found no albuminuria in five out of his fourteen cases. The fact that such a large proportion have shown albuminuria teaches the lesson that in every case of paralysis of pregnancy, whatever be its nature, whether paraplegia or hemiplegia, the urine should be frequently examined.

INSANITY OF PREGNANCY.

That pregnancy has frequently been complicated by insanity is the experience of the majority of general practitioners. The subject has been carefully studied by a number of alienists. According to the observations of Dr. Savage, of England, more mental disturbance is likely to occur when the offspring is male. The form of insanity and the degree varies much in different cases. In some patients it simply constitutes an unusual antipathy to the husband, which as it increases leads them to the delusion that they are losing their husband's love. There

is a tendency to misinterpret a careless word, or purposeless gestures of friends, to lay great stress upon fancied neglect, to interpret lack of visits as evidence that their friends and relatives are now indifferent to them. These changes increase gradually until the delusions come to control their acts. As the disease progresses the antipathy to the husband may increase to such a degree that the patient will have nothing to do with him and will not even speak to him. Dr. Stearns, superintendent of the Hartford Retreat, reported the case of a patient who, during pregnancy, had left her husband and gone to her mother, this act being founded upon the delusion that she could no longer live with him. As a rule the type of insanity during the period of pregnancy is melancholia. In a series of nineteen cases, reported by Stearns, ten cases were melancholia, one was reported as depressed, and eight reported as mania. Daniel Tuke in twenty-eight cases reported thirteen with suicidal tendencies. As to the fact of insanity of pregnancy occurring in primipara,

125 out of 175 of Tuke's cases occurred in first pregnancy.

The insanity of childbirth has so recently been discussed in this journal¹ that I propose only to corroborate his statement that many of the cases of puerperal insanity are septic in origin. The type of insanity when it arises after childbirth, differs from that of the insanity of pregnancy. In the latter, melancholia is the prevailing type; in the former we observe mania. At the Hartford Retreat of 175 cases of puerperal insanity, 135 were maniacal.

That pregnancy exerts a great influence upon the nervous system is abundantly shown in literature. The relation of pregnancy to the nervous system is a fruitful field of investigation. Research and study may yet teach us how to manage the period of gestation, so that its course may be more frequently physiological and not pathological.

525 DELAWARE AVENUE.

¹ Brush: *Am. Med. Quarterly*, September, 1899. p. 141.



NOTES ON PROSTATECTOMY.¹

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PREVIOUS to 1888 the occasional publication of sporadic operations aiming at the removal of obstructing prostatic growths comprised the literature of prostatectomy. It was not, however, until the publication of three cases by Mr. Arthur McGill of Leeds, in 1888, and the communications of Mr. McGill and his colleagues of the Leeds Infirmary at the meeting of the British Medical Association, in August, 1889, that the surgical world awoke to the possibility of attempting anything like a radical operation for the removal of obstructing prostatic masses. Since that time much has been written, a number of different operations have been described and advocated, and a few men have obtained operative experience enough to make their opinions of value to the world. The writer had the pleasure of spending some days with Mr. McGill in Leeds, a few months after his first publications, and will never forget that gentleman's enthusiasm over the future possibilities of the operation which still bears his name. Up to very recently the writer has not been in a position to develop an operative experience which should entitle him to speak with authority, and he comes before you to-night with no masses of statistics to offer in support

of any operative procedure; nor has he any ambition to do more than to bring to your attention certain points connected with radical prostatic operating, points which his own small experience seems to indicate as worthy of notice.

What is the present situation regarding the treatment of prostatics? Briefly it may be summed up as follows: The palliation of the condition by catheter so long as the patient can be kept comfortable by this means; and then attempts to alter the existing condition of obstruction by various operative procedures; the removal of one or both testicles; the ligation of one or both vasa deferentia; the removal of parts of the prostatic growth by incision, enucleation or electric heat; or, finally, by a complete enucleation of the prostatic growth by the suprapubic or perineal route, or both combined. Of the value of the catheter and its wellnigh universal utility in the earlier troubles due to prostatic overgrowth it is needless to speak. Of the operations other than the so-called complete prostatectomy, we may briefly say that each has a limited application in individual cases and brilliant cures are occasionally the result of all. Some are so easily performed that they are a source of danger because they are too frequently advocated and made by persons whose knowledge is incomplete and whose sur-

¹ Read by invitation before the Surgical Section of the Buffalo Academy of Medicine, April 6, 1900.

gical experience is not beyond question. Others require a complicated apparatus and a special skill in its use quite beyond the reach of the bulk of the surgical profession. All this is beyond the limits of these notes.

Coming to the more radical operations, we find the conditions to-day about as follows: on the one hand the earnest advocacy of radical operations, by a few men who have developed an experience large enough to teach them the feasibility of such operations as technical possibilities, and to give them a realization of their utility as measures of relief when properly employed and at the proper time; on the other hand the still prevalent belief among the great mass of the profession that such operations have still to prove themselves. Many such men will subject their patients to months or years of pain and invalidism long after the catheter has demonstrated its powerlessness to give relief, and will allow patients to suffer and die with surgical kidneys under catheter treatment, sooner than offer them the risks which prostatectomy offers. It is this exaggerated idea of the severity and mortality of radical operations upon the prostate and the scepticism as to the possibilities of relief which such operations offer, which is responsible for the present status of the surgical treatment of prostatic disease in the minds of the medical public.

The operations in use to-day are the suprapubic operation of McGill and, in this country especially, that operation as modified by Fuller of New York (that is the McGill operation with perineal drainage), and the perineal operations of Nicoll and Alexander. The suprapubic operation with perineal drainage still re-

mains the operation of choice for most surgeons. The perineal operation of Nicoll is rarely seen in this country, and the operation of Alexander is not yet firmly established in the position to which its value entitles it and which the future is sure to accord to it. In McGill's operation the bladder is opened above the pubes, the mucous membrane covering the projecting portions of the prostate is cut through and the obstructing portions are removed by enucleation with the finger, by cutting with forceps, or by both together. E. Fuller, of New York, has modified the technique of this operation by making a small opening in the mucous membrane covering the growths and enucleating through this the prostatic growths with the finger. Fuller also opens the membranous portion of the urethra and drains through the perineum.

Alexander opens the bladder over the pubes and then places the patient in the lithotomy posture, with a grooved staff passed into the bladder through the urethra. He then opens the membranous urethra, by a median incision, from just behind the bulb back to the apex of the prostate. The staff is then withdrawn, two fingers of the left hand are passed into the bladder through the suprapubic wound and these serve to press the prostate downward into the perineal wound. The enucleation is done with the forefinger of the right hand through the perineal opening. In Nicoll's operation, described in the *Lancet*, April 14, 1894, the prostatic growth is enucleated through the perineum without opening the urethra.

Here, as in Alexander's operation, the combined suprapubic and perineal

incisions are made and in neither operation does the enucleation injure the mucous membrane of the bladder; but Nicoll's operation necessitates a more extensive dissection and takes a longer time, because the enucleation is performed through an incision in the prostatic capsule from behind in order to avoid wounding the urethra. Nicoll does not open the urethra at all, but drains the bladder by means of a catheter passed through the urethra and after the enucleation is complete he packs the perineal wound through which the growths were removed with gauze.

Now, let us look for a moment at the mortality and end results—that is, the measure of relief to be expected, in these operations. The collected statistics of the earlier suprapubic operations showed a mortality of twenty-five per cent. Since that time it has fallen to about fifteen per cent., even including the earlier cases where deaths from sepsis, due to insufficient drainage, were still not uncommon. Now, individual operators with special skill and experience have reduced it even lower than this.

Mayo Robson has reported twelve cases with only one death, and E. Fuller has reported six cases with no death. In the perineal operations the mortality is probably about the same. Of Alexander's first eight cases published December, 1896, two died, a mortality of twenty-five per cent. Since then he has had better results and now writes me that he has done more than twenty cases with only the two deaths above mentioned. Watson (1895) tabulates sixteen cases with a mortality of twenty per cent. I have found no other sets of statistics for the perineal operation. It is

younger and has not yet met with widespread adoption. As to the end results obtained: of course, if a partial operation is done there must inevitably be chances for recurrence of the obstruction, both from the continued growth and the occasional congestive swelling of the remaining portion. If a complete operation is done obstructive recurrence is a practical impossibility. The degree of power regained by the bladder wall after prostatectomy—that is, the expulsive power—must inevitably depend upon the condition of the wall in the individual case at the time of the operation.

If the amount of structural change in the bladder wall is very great it cannot be expected that any removal, no matter how complete, of the obstructing mass, can result in a complete restoration of function. All that can be said is, that it is astonishing to see how much bladder atony can exist and be relieved by a complete prostatectomy. It is to be hoped that more frequent recognition of the condition, earlier in its development, will give the surgeon opportunity to operate at a time when such operations should be done and before the deterioration of the bladder wall is marked, and especially before the kidneys are helplessly involved. Of suprapubic cases, Watson (1895) tabulates one hundred and nine cases with a restoration of bladder function in eighty per cent. Of perineal cases he tabulates sixteen (not including any of Alexander's cases) with a restoration of function in plus fifty per cent. These figures represent the least favorable results in unselected cases by several operators. Many of them were incomplete, unsatisfactory operations, which should

not be enumerated in the list of such cases as we are now discussing.

We must then, if we look to published results, consider prostatectomy as a serious operation with a mortality of fifteen to twenty per cent., and with a possibility of relief from catheter life for about three patients out of four of those surviving the operation. All of this is common knowledge, and is only reviewed in this very brief and sketchy way, in order to bring us to the few points for discussion in a sequential manner.

I have said, and I think you will all agree, that the operation of choice for most surgeons to-day is the suprapubic operation with enucleation of the growths through an opening made in the bladder membrane, and then drainage through the perineum by means of an opening made for this purpose in the membranous urethra. This operation when performed by competent hands with a technique such as that detailed by E. Fuller, of New York, is adequate, and is really the legitimate result and development of the older operations of McGill, Belfield and Keyes; and it has taken its place properly among recognized medical procedures. The perineal operations of Nicoll and Alexander have not fully done so, and it is of them that I wish to speak, and especially of the operation of Alexander, with which I am more familiar. Why is not the operation more generally accepted and performed? It may be in this part of the country, but in New England we scarcely know of it, and certainly have no conception of its excellence as a technical procedure. The reasons are, first: because the surgical world has not believed in its easy performance; second: it has not believed that it

is available for any wide range of cases.

A number of years ago I had the opportunity of seeing Alexander perform his first operation by this method, and, in spite of the fact that the prostate was removed piecemeal, was much impressed with the shortness of time consumed and the good condition of the patient at the end of the operation. My own hands were allowed to convince me at the end of the operation of the completeness with which the growth was removed. Within the last few weeks I have again had the privilege of seeing Alexander operate on two more cases by this method, and was again much impressed with the ease and quickness of the procedure and with the thoroughness with which the masses were removed. Since that time I myself have operated twice by this method. In both cases the same ease of execution was experienced, in spite of my complete lack of previous experience with this method of operating. The two cases, although of little general value as evidence to others, have served to convince me that this procedure does completely and easily remove the obstructing masses very rapidly indeed and with little hemorrhage; that the drainage provided is as perfect as the care and watchfulness of the surgeon chooses to make it; and that it requires no extraordinary skill to satisfactorily complete the operation without wounding the bladder membrane.

To such statements as the foregoing the common reply is: "Granting the practicability of the operation as a surgical procedure, it has not a wide field for usefulness, as it cannot be of use in cases where the third lobe projects much into the bladder." It so

happens that, of my two recent cases, one was a case where the growth projected markedly into the bladder, and the two lateral lobes with the smaller third lobe made a large, thick collar encircling the vesical outlet. It was interesting to realize how easily the third lobe could be pushed down and enucleated after the more easily accessible lateral lobes had been removed. I am convinced that it is perfectly practical to do this same thing in cases where the third lobe is larger, and plays a more important part in the obstruction caused by the prostatic growth than was the case in this instance, provided always the lateral lobes be first enucleated. I am, therefore, confident that this method of operating has a much larger field of usefulness than the surgical profession in the least appreciates. It is also said that these perineal operations are not feasible in the cases of small, hard, fibrous prostate with a close adherence of the gland to its capsule. I can only say that I saw Alexander remove in this way one of the hardest prostates I ever felt, in a case which had previously been operated upon by another surgeon by the suprapubic route, and in a case which I carefully examined, both before and after operation and should have considered non-operable, had I not seen him enucleate the whole prostate thoroughly and quickly in three pieces.

The second of my own recent cases was that of a young man with tuberculosis of the prostate, the left half of which was completely destroyed by the disease and was an abscess cavity, while the right half was a dense hard nodular mass which, by palpation, surely suggested difficulty of removal as much as such tissues can well do.

This right half was removed entire with little difficulty.

Dr. Alexander claims for his operation : First: "That the entire prostate is thoroughly and entirely removed by enucleation." That this is true, and that the procedure is applicable to a much wider range of cases than is generally believed, I have already stated my conviction.

Second: "That the mucous membrane of the bladder and prostatic urethra is uninjured and the danger from septic absorption is thereby lessened." That the operation can readily be performed without injuring the bladder membrane has been repeatedly demonstrated; that an intact, uninjured bladder membrane must of necessity diminish the danger of sepsis is a self-evident fact.

Third: "That hemorrhage is reduced to a minimum." Anyone who will study the circulation at the vesical neck will at once realize that an operation which attacks the prostate from the perineum must cause less hemorrhage than a similar operation by suprapubic route. In no one of the six cases which I have seen or done was there any severe hemorrhage.

Fourth: "That the most efficient and thorough drainage is secured." With drainage tubes through both suprapubic and perineal wounds it will be evident to all how completely and easily the bladder can be drained, and how little excuse there is for death from the absorption of septic material after the operation is performed.

Fifth: "That the time required by practised hands to perform the operation is comparatively short." I never had the slightest doubt of the truth of this statement after seeing one or two of Alexander's operations. Had

I doubted it, my own first experience would have gone far to convince me of its truth.

Now let me reaffirm the truthfulness of these statements. If they are true, what is the cause of the mortality from this operation? If they are true, there should be very rarely indeed any death from shock, from hemorrhage, or from sepsis, and that is precisely the case. The operation can be done quickly, and so avoids shock from long anesthesia and long operating. The operation is performed easily, with the finger as a blunt dissector, and the growth is approached from the perineum where the venous circulation is less complicated than at the neck of the bladder. Both of these factors tend to reduce hemorrhage to a minimum. The membrane of the bladder is left intact and the drainage provided is so adequate that it must be largely the fault of the surgeon if sepsis occurs. Finally, the end result is as good as can be obtained in any case under any circumstances, for the prostate is completely enucleated.

There remains renal disease as the one common cause for the mortality in this operation which is, in a sense, beyond the control of the surgeon; and this renal complication is precisely what causes most of the deaths from perineal prostatectomy. In the earlier days of prostatic operating, when operations were often prolonged, hemorrhage severe, and drainage over the pubes incomplete and hard to regulate, deaths from shock, hemorrhage or sepsis were to be expected and were not uncommon. Now deaths from these causes are not common because with experience and improved technique, means have been found to avoid them, and when a death occurs for

one of these reasons, it is perhaps fairer to say that carelessness rather than the necessary conditions of the case is responsible for it. Renal disease should be the surgeon's most common anxiety in planning such operations, and cases with serious renal involvement should rarely be considered as fit subjects for this operation.

Old men with diseased kidneys are not fit subjects for an avoidable operation of any kind or degree of severity. There undoubtedly remains much for the future to accomplish in improving the operative procedures at present in vogue. It may well be, for example, that by performing operations in two sittings, making the suprapubic cut first, and perhaps with a local anesthetic, and leaving the more serious part of the operation for a later occasion, we may come to operate with greater safety upon cases where the kidneys are seriously involved. At present, however, we are forced to the conclusion that we must either accept the present mortality as a fair one, and one to be expected and to be taken into our calculations in our statements to patients, or else we must acquire an experience which will justify us in operating earlier in the progress of the case, when the various renal complications are less apt to exist. That experience is coming now. There are already surgeons in the world whose skill and experience are such, and whose mortality rates are so small, that they are in duty bound to offer prostatectomy to those patients under their care who can no longer be made comfortable and be kept so by other means.

Most of these surgeons are operating by the suprapubic method. There

is undoubtedly a place for both methods of operating, and there are undoubtedly individual cases which will belong more properly to one procedure rather than the other, but I believe that Alexander has provided us with an operation which completely meets the requirements of the cases where it can be appropriately done, and which is of enough technical ease and simplicity of performance to place it properly at the disposal of any careful surgeon of ordinary skill and experience. It can be, and is being, proved that its range of usefulness is a much broader one than is recognized by the surgical profession to-day.

Let me repeat that I have come here with no statistics to offer and I have given opinions toward the proof of which I have added little to what Dr. Alexander's writings have already taught. I have ventured to do this because I want very much to interest you in these operations. I want to interest you so that you will give yourselves the experience which it is possible for every surgeon to acquire in this field, even if such experience shall lead you to opinions contrary to those which are here expressed. No matter what you may think of this or that operative procedure, experience is sure to lead you to the conviction that radical relief for the discomforts and dangers incident to prostatic obstruction is within our reach.

We all realize the great utility of the catheter. We realize also its widespread abuse, and we all see patients pass through months of invalidism and pain, with the catheter as a very impotent instrument of palliation for a condition which ends in surgical kidneys and death. We have two present duties:

First—To teach the general medical public the limitations of catheter treatment and the necessity for letting the surgeon be his own judge as to the proper time for interference, as well as to judge of the technical character of that interference; to teach them that prostatics should be made comfortable and kept so by a radical operation early in the disease, if other means fail or cannot be properly instituted.

Second—To teach ourselves the possibilities which these new operations are opening up to us and to give ourselves an experience which will justify us, as it most certainly is going to do, in offering a radical operation to persons so early in the progress of the disease that renal complications will be as rare a cause of death as shock, hemorrhage and sepsis are already coming to be.

In the preface to the second edition of his book on "Enlargement of the Prostate," published in 1899, Mansell Moullin says: "Thanks to the progress which has been made in the surgery of the prostate in the course of the last few years, progress which only became possible when the true sexual character of the gland had been once more established, there is now no case of enlargement in which perfect relief cannot be obtained, provided only the secondary consequences, which so often and so entirely unnecessarily follow it, and which are due in the vast majority of instances to the careless use of catheters, have not been allowed to work irreparable harm upon the walls of the bladder. In no department of surgery are the disastrous results of temporizing and delay shown more clearly than in that which is concerned in the prostate."

I take it that he does not mean by

this to deprecate the use of the catheter or to deny it its undoubted place among the means of relief at our command, but rather to indicate its abuse and to point out that we have already reached the place in the development

of radical prostatic operating where such operations can be offered freely to those patients where the catheter no longer suffices, or where the circumstances of the individual case prevent its proper use.

244 MARLBORO' STREET

THE TREATMENT OF EPILEPSY IN ITS INCIPIENCY.

BY WM. P. SPRATLING, M.D.,

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INSTEAD of "The Treatment of Epilepsy in Its Incipency," the title of this paper might have been "The Treatment of Epilepsy in Early Life," epilepsy being essentially a disease of early life.

I think it was Dean Swift who said, "If you want to make much of a Scotchman, you must catch him while he is young." The same principle largely applies in the treatment of epilepsy. Sir William R. Gowers makes the statement that 75 per cent. of all cases of epilepsy begin under the age of twenty years. Personally, I believe that more cases occur before that age. In three years and a half 505 epileptics were admitted to the Craig Colony. In 427, or 83 per cent. of these, the disease began before the twentieth year.

Both epilepsy and insanity are largely diseases that tend to appear at one or the other of the epochal periods. In the child, epilepsy is especially liable to develop: 1st, during early infancy and dentition; 2d, during the period covered by the seventh and eighth years; 3d, during

the marked transitional period of puberty. In either case, the epileptic basis may be present as a heritage, requiring only the physiological disturbances incident upon such periods to develop the attacks.

Epilepsy, then, or epileptic phenomena, may occur in early life from the following causes: 1st, direct transmission of the epileptic foci from the parent to the child; 2d, accidents at birth, including birth palsies, cerebral hemorrhages, and accidents due to instrumental delivery; 3d, to the results of intense pathological processes that should be physiological, such as difficult dentition, accompanied by very high temperature, and occurring in a rachitic, tuberculous, or scrofulous child; 4th, to the results of indigestion and malassimilation, due to improper feeding; 5th, to the accidents of early life common to that period; 6th, to the grave physiological disturbances that come at puberty, and that are more apt to be followed by evil consequences in persons who suffered in infancy or early child life from con-

vulsions, or who inherited a neurotic taint.

Before we approach the subject of this paper, I would attempt some differentiation of the forms of epilepsy; and while we have as yet no satisfactory nomenclature of the disease, I would first divide it into true and false, and exclude in the beginning those cases of so-called epilepsy due to some distinguishable physical infirmity or defect, such as a strained eye muscle, a stricture of the urethra, a poisonous gas within the intestinal canal, an immediate injury to the brain, these and the like. We know that all of these, and kindred disorders, light up what is best to term in the beginning epileptiform convulsions; but which are not, in the manner in which we understand genuine epilepsy, the true disease. That later in life they may lead to genuine epilepsy there is no doubt.

On the same principle, a single animal walking through the forest along a well-defined course will not, at first, make much of an impression on the surface of the earth. If this animal follows the same course several times each day for many days in succession, the result eventually will be a well-beaten and defined path. There has been made on the land an impression, a mark that it is difficult to eradicate without leaving some trace. The same principle applies to so-called epileptiform convulsions; an irritant applied in the first place may necessarily require to be very severe in order to produce convulsive phenomena; but that irritant, each time in the future it is applied, needs to be less and less in intensity in order to produce the same epileptic phenomena. Habit epilepsy is as well defined and

understood as is habit chorea, habit spasm, or any pathological or physiological habit; and, sifted to its last analysis, it simply means that the necessary stimulation or irritation was properly applied in the first place to produce convulsive phenomena, and that each succeeding stimulation applied to that part required to be less and less in order to produce the same, or worse results. Moreover, there is an inverse ratio about this matter, for, as the irritant becomes less in degree, the result grows greater, while the opposite is equally true.

We will therefore eliminate, at the beginning of our study, these so-called epileptiform seizures, bearing in mind, at the same time, that they are destined to be destructive unless relieved; but we cannot, at first, conscientiously consider them as true epilepsy. The very fact that so large a per cent. of all cases of epilepsy show origin before the age of twenty years is ample evidence that the disease is largely transmitted by heredity or through hereditary influences. This proposition presupposes that the individual is defective in some respect in the beginning, or it presupposes that the essential soil in which the seed of epilepsy is to be planted is capable of doing the work required. Personally, I have come to believe that the disease is largely one of the degenerative type, that the general tendencies of its effects—true epilepsy, I mean—are towards degeneration and retrogression always.

Another thing is important in the treatment of epilepsy, or epileptic phenomena, and the sooner we can begin it, the better it will be for the individual. Let us revert for a moment to the simile of the animal that tracks the forest. If he passes once over a

given course the surface of the earth is but little changed, or not at all; if he passes over it many times it will be correspondingly difficult to eradicate the marks made. Therefore, the sooner we ascertain and attempt to remove the cause that creates the epileptic channel, or the epileptic focus in the individual, the greater will be the chances of a cure. This principle applies to cases of genuine epilepsy as well as to others, and goes so far as to include even those who have inherited the disease itself, or a tendency to the disease; for we must consider that the fetus in utero cannot readily have impressions made upon it that will bring about convulsions of any kind; at least there is no evidence on file to show that such has ever been the case; it is only after the irritations that come from the external world are applied to the pre-sensitive nervous system, or the well prepared soil of the child, that epilepsy is developed.

My first plea, therefore, would be for an early recognition and differentiation of the disease; and let me, if you please, lay especial stress upon the word differentiation. Let us first decide whether it be true epilepsy, or whether it be pseudo-epilepsy, or what may be better described as reflex convulsive phenomena. If it proves to be the latter, we can deal with it far more easily and with hopes of far better results than if the former is found to be true. If it be true epilepsy, we must apply ourselves to the treatment with the expectation of spending more time and more energy and in the hope of accomplishing in the end far less good, because I do not believe, after an experience of fifteen years spent in the immediate study and treatment of this disease, that it can be demon-

strated by any one that more than six or eight per cent. of cases of genuine epilepsy recover; whereas, with reflex epilepsy, or cases manifesting reflex epileptic phenomena, the ratio of recovery would go very much higher.

As to form, I would divide the treatment of genuine epilepsy grossly in two ways. First: Its institutional treatment; second, its home treatment. And I will dwell here especially on its home treatment, for the reason that my readers probably have a greater interest in that part of the subject. Any one familiar with the facts in the case must realize that it is far more difficult to handle the subject of any disease in the patient's own home than it is in an institution especially constructed and maintained for that especial object, and I do not know of any disease where this fact is so applicable as in epilepsy. I do not know of any class of defectives who are so apt to fly from the lines of normal action as the average epileptic; I do not know of any people, as a class, who cannot be judged in the light of their action of to-day as to what they will probably do to-morrow as the epileptic; I do not know of any people whose line of continuity of action is so frequently and violently broken, by virtue of the very nature of their malady, and whose mental vagaries are so uncertain, as the epileptic.

The difficulties of home treatment are great, and the first one that we encounter is that of parental sympathy. I am firmly convinced that this well-meant, but illy used influence, has stood stoutly in the way of the recovery of many cases, and I do not see how it can be removed, for we must accept human nature as it is. Parental sympathy in the home nearly

always steps in and defeats the objects we are trying to obtain when we prescribe the hour at which the epileptic child should retire, the hour at which it should have its meals, what it should eat, how much it should eat, and what the lines of its life in every respect should be. It is a kind and well-meant sympathy, but it is destructive to the child. It has been estimated that not more than from one to two per cent. of persons suffering from genuine epilepsy recover under home treatment, and one of the chief causes is that the physician's best efforts are defeated by parental sympathy. This element, therefore, should be completely eliminated, if possible; if not, then as far as possible. If the family is able, place a nurse—some one kind, tactful, strong-minded and intelligent—in charge of the child. If this plan does not work, send the child away into the country, where everything for its comfort, education and treatment can be had, remembering always, if you please, that the brain of the young epileptic is especially apt to deteriorate unless remedial measures are actively put into practice.

Another thing that often tends to defeat home treatment is the free use of medicines, too often, I am sorry to say, of the patent kind given the pampered child by the parents. The credulity of human nature is very great and it is unfortunate that so much faith is put in simple statements, printed to the effect that certain drugs are guaranteed to cure certain diseases. It has been our experience that epileptics, above all other individuals, are prone to believe these statements and to make use of the nostrums prescribed. It has also been

our experience that such drugs readily do more harm than they do good, and I will explain the reason. A noted physician, whose acquaintance I have the honor to enjoy, made an intimate study of the so-called "Keeley Cure" for alcoholism a few years ago, and I believe he arrived very nearly at the truth of the composition of the injections given to destroy the taste for alcohol. His conclusion was that the injection contained apomorphia, which, of course, made the patient ill each time he received it, and it was so arranged that he should receive it immediately before each drink he was given, which was carefully cut down each day. The patient, of course, associated the sickness and the taking of the alcohol together and ascribed the sickness to the effects of the alcohol, whereas it was the apomorphia that made him feel badly.

In most of the patent nostrums that I have examined, the so-called sure cures for epilepsy, I have found that they contain some powerful sedative, which, if given according to directions, do often suspend all epileptic manifestations; but it is suspension only. On the other hand, no regard is paid to the patient's physical condition, and I have seen cases take these patent nostrums for two weeks and be at the end of that time in a condition of acute delirious mania. The trick, therefore, is to suppress the fits at the expense of the patient's general health; but remember, it is a suppression only, and not a cure. I believe, therefore, we should strictly guard against the patient in his own home using any of the advertised nostrums for the relief or cure of his epilepsy.

As a third precaution, certain foods only should be used. At the Bethel

Colony for Epileptics, at Bielefeld in Germany, where I lived for some weeks in the spring of 1892, in order that I might study the methods in vogue in the treatment of patients in that institution, I found that more stress was laid upon the preparation and administering of proper foods, in proper quantities, and at proper times, than in the simple giving of drugs. Dr. Huckzemeir, the chief physician of the colony, who had been there for fifteen years, frequently told me that he believed proper foods were more valuable than drugs in the majority of epileptics. We are not prepared to say that foods are more valuable than medicines, but we are prepared to firmly state that good foods have a firmly fixed place in the proper treatment of epilepsy.

At the Craig Colony for Epileptics we have been accustomed to divide the treatment of patients under three broad heads; first, the medicinal; second, the dietetic; third, the moral. I feel that the food treatment of the young epileptic is so important that I cannot pass the subject here without laying down what I believe to be certain broad principles connected with the same.

First, we should be extremely careful to administer no food that cannot be readily absorbed and assimilated, for if we overlook the fact that the functions of the digestive organs are gravely impaired during epileptic convulsions—usually as the result of anti-epileptic drugs taken in large quantities—and if, in consequence, we give food that the patient is unable to assimilate, this undigested food will decompose in the stomach and intestinal canal and cause irritation of the gastro-intestinal membrane, and will be

sure to augment the epileptic phenomena.

Second, we should endeavor first to utilize foods to the greatest extent that is safe and possible, for the purpose of checking the waste of tissue, which is associated with every epileptic seizure. The greater the number of seizures and the more intense they are, the greater the waste of tissue to be checked.

We have come to believe at the colony that our dietary should be made to contain a principle, and we endeavor to recognize this principle instead of laying down hard and fast lines as to the exact articles that should be prescribed or proscribed. I will go a step further and state that the principle of our dietary is that patients shall have meat but once a day, and that at the noon hour, and only a small quantity; they shall have nothing fried in grease, and nothing in the way of pies, cakes or pastry. They must eat largely of cereals, bread stuffs, milk, fruit, eggs, and butter; but I would like to re-iterate that there are no hard and fast lines, yet that there is a fixed principle that it will be well for us to observe in all cases.

Another point of comparison between home treatment and the institution treatment, is the matter of discipline. We have spoken of the epileptic as an individual liable to suffer a break in his continuity of action. The very nature of his disease makes this possible: the basis of all epileptic phenomena is in the brain; the brain is the organ of the mind and anything that destroys the integrity of the brain will affect the integrity of the mind. His line of continuity of action, therefore, is broken, because

his power of inhibition is destroyed. It is here that parental sympathy comes in again, to permit the patient in his own home to do as he pleases. In the institution he is made to feel certain ever present and active forces that tend to keep him along the line of proper conduct. These, in time, will have their effect and, of course, are for his good.

It is hardly essential that I should attempt to cover the drug treatment of epilepsy in this paper; our aim is not so much to treat the disease *per se* as it is the individual; but, at the same time, there are certain drugs, when properly given and their effects carefully watched, which do, undoubtedly, have a direct effect on the seizures themselves. Of the newer of these I might mention the fluid extract of horse-nettle berries, a preparation of Parke, Davis & Co., that we have tried quite satisfactorily during the past summer and with uniformly good results. It appears to have advantages that none of the sedatives of the bromide group possess, for the reason that it does not destroy or impair the functions of the digestive system as the members of the bromide groups do; on the contrary, it appears to possess distinctly tonic properties. Simulo is also another drug that has been used with very excellent results in the treatment of epilepsy. Fleishiz's treatment, that was so popular a few years ago, I believe has had its day. It was the opium and bromide treatment combined, and I have yet failed to see a case in which it produced any permanent benefit.

There is no use in enumerating the drug treatment further, for the list is too long. For obvious reasons it may sometimes be advisable to check or

abort an expected seizure, when such seizures are preceded by an aura of sufficient length. This we can do by giving the following mixture: Bromide of potassium, 30 grs.; chloral hydrate, 20 grs.; morphia sulphate, $\frac{1}{4}$ gr. This, of course, being the dose for an adult; the dose for a child to be in proper proportion. This combination, however, acts as a repressant only, and it cannot be said to have any curative properties; but I have known it in certain cases to hold the seizures in abeyance for months at a time.

We have learned from experience to lay great stress on the physical treatment of epilepsy, and by this I mean chiefly the systematic exercise of all the muscles of the patient's body. We make it a practice to give each patient a thorough physical examination on his entrance to the colony and to prescribe for him such work as he can best do and such work as will probably meet the requirements of the case; for instance, if the right arm or the left leg shows an abnormal weakness, due to a partial destruction of the cells in the brain that govern the right arm or the left leg, we try to give that patient some form of exercise or systematic labor that will tend to build up the center in the brain that feeds, governs and controls that arm or that leg. We have great faith in the maxim that "the working hand makes strong the working brain," and we have at the colony to-day more than fifty young epileptics suffering from paralysis, more or less marked—some of them could more properly be termed exhaustion—as the result of a prolonged number of epileptic seizures, the discharge occurring in a certain area.

The treatment of this particular class of young epileptics has never

been properly dwelt upon. They have been classed, unfortunately, oftentimes with the orthopedic cases, and surgical measures have been instituted for the relief of the deformity, whereas, the trouble was central and should be so treated; and I wish right here to lay especial emphasis on the fact that no class of young epileptics deserve more careful and skilful treatment than those who suffer from such deformities. Moreover, it has been our experience that no class of young epileptics can be more greatly benefited than this class; but it requires time, patience, the expenditure of money and a high degree of skill to accomplish it. For some of them we must prescribe work in the gymnasium; for others, work with a hoe, a pick or an axe in the open air; for others, the sewing machine; for others, a turning lathe; for others, other forms of labor that will bring directly into use and build up those parts that are essentially the weakest, always remembering, if you please, that "the working hand makes strong the working brain."

We have had young boys at the colony for whom we could not find suitable employment just at the time, and who suffered from paralytic deformities due to epilepsy, carry stones from one place to another, merely for the purpose of developing the weakened hand, and his apparently purposeless occupation has resulted in great good to the boy. And just in this connection let me mention the fact that epilepsy is a disease that does not possess a single symptom for which a strictly physiological prototype cannot be found. All epileptic movements and phenomena might be physiological if performed under the

conscious action of the individual. This being true, I believe that it behooves us to treat the cases in a way that will bring into physiological play the muscles of the body that would otherwise be involved in pathological action during seizure.

In so brief a paper as this it is impossible to go into this extremely important subject in detail, and I will therefore try to lay down certain broad principles only, which I will summarize as follows:

First—Make an early differentiation of the type of epilepsy from which the patient is suffering.

Second—If it be reflex epilepsy, or if the child be suffering from epileptic phenomena, the chances of cure are much greater than if the case be one of genuine epilepsy.

Third—If genuine epilepsy be present we are in a position to give a much more accurate prognosis as to the ultimate outcome and to apply better principles in the treatment of the case.

Fourth—Remove as far as possible parental sympathy from the treatment of the child, for if allowed to assert its way this usually does more harm to the child than good.

Fifth—Endeavor to keep from the young epileptic the many patent nostrums that, when taken by him, only aggravate his disease by first masking the true symptoms of the same; second, by destroying or impairing the functions of the gastro-intestinal tract.

Sixth—If the seizures be localized and a given part of the body chiefly involved at the time of convulsive phenomena, and suffers therefore exhaustion or partial paralysis as the result of same, apply physical means for its correction as soon as possible,

for it will only be by these means that such a difficulty can be overcome.

Seventh—We must learn to place great value on little things in studying the etiology and treatment of this obstinate malady, and in illustration of this last point let me say that it was my pleasure, in January of the present year, to see in the Pathological Museum, in Berlin, under direction of Dr. Rudolph Virchow, six cases in which the hemorrhage had occurred in capillary form in the brain. Dr. Virchow, without the use of any magnifying power, had no difficulty in locating the seats of these minute hemorrhages. He told me that these

small hemorrhages, with their results, had caused death.

Two weeks later I saw Hughlings-Jackson in London, and I asked him what, in his opinion, would be ultimately found to be the cause of perhaps the larger number of the so-called cases of idiopathic epilepsy. His reply was that they would be found to be due to capillary hemorrhage in the brain, followed by minute spots of softness. I at once associated what I had seen on the *post-mortem* table in Berlin with the remarks of Dr. Jackson, and my regard for small things in medicine grew a hundredfold.



LIMITATION OF OPERATIVE GYNECOLOGY.

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THE purpose of selecting the above subject for presentation to-night is with the hope that a full discussion would bring forth to your notice the grave necessity for conservatism in operative gynecology. The tendency of surgery to-day is to follow the backward swing of the pendulum. I am thankful to say the great furore and excessive activity of the gynecologist, which has resulted in the wrecking of many female lives, to say nothing of the mortality list, has moderated.

Gynecology is but a branch of specialization of surgery, a fact that should not be lost sight of, and it seems to me that the foundation of a specialty must be the result of a thorough grounding in and comprehension of the principles, the theories, and practice of the general subject. *A priori*, the general surgeon who is constantly meeting with and overcoming the problems and abnormalities of the surgically sick human body is better qualified to meet the indications than is the specialist. A fact that we well know is the tendency of all specialism to confine itself to its own narrow limit and to lose sight of the larger field and the possibilities of intercurrent and interdependent affections of the human organism. In other words, the specialist is apt to lose sight of generalities and substitute therefor his own narrow range of vision.

For the sake of clearness I will offer

the following points for your attention:

- Ovariectomy.
- Salpingo-oophorectomy.
- Hysterectomy.
- Repair of Lacerated Cervix.
- Dilatation and Curettement.
- Perineal Repair.
- Intraligamentary Cysts.
- Displacements.

OVARIOTOMY.

In discussing the question of ovariectomy, the point of greatest importance for consideration is the question of distinction between the pathological lesions of the ovary or ovaries which call for complete or partial removal of the organ or organs. From the standpoint of a general surgeon daily doing abdominal work, it is my belief that more of these organs are sacrificed by the gynecological operator than should be. The ordinary cystic ovary we shall dismiss at once by pronouncing it a normal organ. Cystoma of the ovary which has advanced to the degree of only having destroyed a part of the ovarian stroma calls simply for excision of the cyst, and suture of the wound. If upon evacuating a small retention cyst of the ovary, the lining membrane is found to be covered with a villous-like growth, the ovary had better be removed.

If the tumor of the ovary has undergone a calcareous change, the organ being functionless, it should be re-

moved. It should be stated that in doing this class of work there will occasionally follow an inflammation of the organ or organs which will result in the deposit of exudate to the degree of occasioning a mass, which gives the patient more or less discomfort, necessitates her remaining quiet, and which is readily felt by vaginal touch if not by palpation of the overlying belly wall. This condition, I believe, is caused more commonly by infection introduced by the ligature and suture materials. I believe that catgut is responsible for the majority of cases of post-operative sepsis not due to infection contained in the pathological lesion or infection deposited by the surgeon. I do not have any hesitancy in stating that the older I grow in the practice of abdominal surgery, the less confidence I have in catgut and the more confidence I have in silk. I believe, again, that a small percentage of inflammatory tumors consequent upon this operation is the result of reactive inflammation and explainable only by the lesser resisting powers of the patient peculiar to her. Let us grant, then, that we have a small percentage of bad results, in some of which subsequent operation for the removal of the organ or organs will be necessitated, yet in comparison to the great good accomplished by this course against the little good accomplished by the removal of the organs so essential to the welfare of the economy during their functional years the rational position of the surgeon in this type of cases is the conservative one.

The question of leaving one or both ovaries in all pelvic operations prior to the change of life, where it can be

safely done, I think admits of no argument. Anything that can be judiciously and safely done to prevent the premature change of life we must admit should be.

Ovariectomy to influence the growth of a fibroid or to control the bleeding is an operation that is seldom resorted to. A fibroid tumor that calls for such measures should be removed, and along with it in most cases the offending uterus. But even here we can sometimes remove the tumor and leave the uterus and its appendages, and thus prevent an operation which at best is mutilating and is followed by unavoidable consequences.

SALPINGO-OOPHORECTOMY.

The treatment of inflammatory diseases of the Fallopian tubes has been gradually drifting toward conservatism, and we now endeavor to preserve those organs which in former times were sacrificed for either salpingitis, hydrosalpinx and pyosalpinx, and the like. In the past no consistent effort was made to save these organs after they had been once the subject of an inflammatory process. It has been the experience of every surgeon to have patients refuse to submit to operation for the removal of the uterine appendages, and have the patient recover without any operative interference. While I believe that a certain proportion of these cases will ultimately require surgical interference, still I think that we should make some effort to preserve the adnexa previous to advising their removal.

If the treatment for the inflammatory conditions of the tubes is not followed by an improvement, and the patient shows signs of peritoneal in-

vovement, then operation for the removal of the diseased tubes is indicated.

The removal of the uterus, an operation which has been advocated extensively as a means of overcoming many of the difficulties occasioned as a result of the inflammatory processes outside of the uterus, is one, I am convinced from experience, that is but rarely called for. There are, no doubt, certain cases which would entail the loss of this organ, and we all of us have met with such; still, to make a routine practice of this because of difficulties encountered is certainly bad surgery.

The question of the choice of route in operating for pelvic inflammatory conditions can scarcely admit of argument; yet, pause but for a moment, and think of the immense amount of literature that has been written in favor of the vaginal route. I regard the vaginal as the proper route for the evacuation of a collection of pus, or pus and blood, which occupy the recto-uterine culdesac under certain conditions.

Incision through the vaginal roof is applicable in cases of purulent collections occupying the above peritoneal fossa, the result of post-puerperal sepsis, where the patient's general condition would not warrant abdominal operation; in cases of suppurative extra-uterine pregnancy, the collection occupying the same position; and, in a small percentage of cases of purulent collections in this locality the result of pyosalpinx. This form of incision is especially indicated when the purulent collection not only displaces the roof of the vagina, but also projects into the rectum, and is attended by rectal tenesmus and the passage of mucus.

To open up the pelvis by way of the vagina with the intention of removing the uterine appendages, when the subject of inflammatory disease, or the uterus in connection with the appendages, is to my mind unsurgical, unphilosophical, illogical, unwise, and exposing the patient to risks not warrantable. It is unnecessary to say that with the abdomen open, the patient in the Trendelenburg position or not, as the surgeon prefers, the non-adherent coils of intestine in the neighborhood of the lesion are displaced upward and held out of the way with sterile gauze so placed as to perform this office as well as to completely shut off the peritoneal cavity from any possible likelihood of infection, and makes the operator master of the situation, anatomically, pathologically, and enables him to say he is "monarch of all he surveys."

HYSTERECTOMY.

This leads to the question of hysterectomy and the choice of routes and the indication for each. There are three conditions which call for the operation. Malignant disease, fibroid or other benign tumors, which attain large size, and sepsis of the uterus, which involves the walls and structure of the organ to such an extent that nothing short of hysterectomy offers any hope for the patient's life.

I might say here that in malignant disease of the uterus which has advanced far enough to cause pain, be its location where it will, operation offers practically nothing so far as controlling the disease is concerned.

The very early stages of carcinoma of the uterus, be it in the fundus or cervix or os, is the time when operation offers the only chance of recov-

ery. There has been a spirited discussion going on as to the choice of routes for hysterectomy, and, like many other mooted questions, I think the truth lies somewhere near the middle. Both vaginal and suprapubic hysterectomy are good surgical procedures, and there are cases where one or the other is indicated. In carcinoma of the os and cervix near the os, and even near or at the fundus, before involvement of the periuterine tissues takes place, and when the uterus is movable and small, I usually do vaginal hysterectomy. For all other conditions I think the suprapubic route offers the greatest advantages.

Hysterectomy is an operation of such severe and extensive mutilation that I believe it should only be done as a last resort or when the indications are positive and imperative. I cannot too strongly condemn the practice of removing the uterus as a routine practice in cases of pyosalpinx, or, in fact, for conditions outside of the uterus itself. The interference with pelvic support caused by hysterectomy renders the operation unsurgical except for the specific indications mentioned.

Carcinoma or a septic uterus riddled with abscess furnishes the indications for total extirpation, while fibroids or the benign tumors can usually be removed by a partial hysterectomy.

REPAIR OF LACERATED CERVIX.

There are two conditions associated with this question of repairing lacerated cervix about which I want to speak particularly. One is where the condition causes sterility; I mean when a woman has had a child and then becomes sterile, and where there is no other explanation of the subsequent

sterility. In these cases a repair will bring about a correction of the unhappy state, and I have had cases where conception has taken place after the cervix has been repaired under these circumstances. The other is where the patient gives a family history of carcinoma, no matter how remote.

An association of lacerated cervix with tubal disease presents a problem which frequently requires the greatest acumen and calls for an exercise of the most mature judgment in deciding upon the proper course to be pursued.

I have seen a latent salpingitis which was being successfully drained through a lacerated cervix start into active inflammation and actually become suppurative after repair of the tear. Under these circumstances, if the indications are strong enough to demand repair of the lacerated cervix, the abdomen should be opened and the offending and diseased tubes should be removed, for the closing of the drainage through the cervix makes the indication for the abdominal section.

Laceration of the cervix should be left alone unless the condition gives rise to active symptoms. Small tears which do not show eversion and ulceration, tenderness or swelling and induration, can be safely left to nature.

DILATATION AND CURETTEMENT.

There is no operation in gynecology which has had so much stress laid upon its performance for the relief which it is supposed to afford and which has been so indiscriminately done as has dilatation.

The condition for which dilatation of the cervix has been done, stenosis,

dysmenorrhea, and the various malpositions of the uterus. There is no operation which theoretically could be of greater benefit to the patient, while in practice this is not generally the case. It is exceptional for this operation to be followed by the result which is expected, and there is no doubt that many cases of acute inflammatory diseases of the uterine adnexa have been excited by this procedure.

The patient who has been the subject of dilatation of the cervix most ordinarily becomes hypochondriacal because of the non-relief afforded.

In the same category with dilatation can be placed curettement. Like the preceding operation (dilatation) curettement has been done without rhyme or reason. Whenever the patient has been the subject of some obscure uterine condition which has resisted the ordinary modes of treatment, curettement has been advocated. There is no operation of the same magnitude which is fraught with so much danger or which requires greater skill to perform. The likelihood of opening up a new avenue for infection, the possibility of perforation of the uterus, especially after labor, makes this a procedure which must be done only by those possessing necessary skill and judgment for its performance.

PERINEAL REPAIR.

A lacerated perineum should always be repaired, for no matter how slight the skin lesion may seem, a careful examination will disclose a tear of the pubo-rectalis portion of the levator ani muscle.

It is the lack of support from the torn muscle which renders repair imperative.

INTRALIGAMENTARY CYSTS.

The subjects of intraligamentary cysts proper, those which truly develop within the broad ligament, not including the para-ovarian and the intraligamentary ovarian cyst, constitute at times troublesome cases with which to deal. In the more aggravated form the cyst is intimately adherent to the floor of the pelvis, and, as so frequently happens, they are not recognized early, and that by their presence adhesions between the cyst wall and overlying broad ligament, the neighboring viscera, the sigmoid flexure, and particularly coils of small bowel, makes it an important question to decide, whether to attempt to enucleate the cyst by dividing the overlying ligament is the better practice when it can be done, or whether to open and empty the cyst, attach the margin of the incision in cyst wall to that of the abdominal incision, drain and pack. In the absence of extensive bowel adhesions, particularly of the small bowel, it is the practice of the writer to enucleate. In a small percentage of enucleations I have found it necessary to do a supravaginal amputation of the uterus. In enucleation of a deep-seated cyst the most important structure to bear in mind is the ureter. In the cases of extensive and numerous adhesions I am convinced that it is better practice not to attempt to enucleate, as it too often happens that fecal fistula either follows immediately or remotely, and if the fistula is one of the small bowel and the patient considerably past middle life, the result is more likely to be death from inanition than from any other cause. The principles which influence us in dealing with complicated surgical

conditions in other portions of the body serve us here as well.

DISPLACEMENTS.

All of the various operations for correction of uterine displacements are at the best unsatisfactory. It requires judgment and experience to decide upon the procedure best fitted for the individual case and difficulties are often encountered in carrying out the proper method to a successful issue. Frequently one operation is not sufficient to overcome the deformity and a part of one or the whole of several operations will be required.

Let us consider retrodisplacement. First of all we must determine whether the case requires operation and if it is likely to be followed by a cure. If we decide to operate, then we must take into consideration the age and state of the patient; if she be married and past the climacteric we can do an operation which will not interfere with gestation, that may otherwise be possible, and after an operation make the subsequent state worse than the first.

What shall we do in women during the child-bearing period, who have retrodisplacement severe enough to require operation? We have, I think, the choice of two procedures, Alexander's operation or its modification, and intraperitoneal shortening of the round ligament. Ventrofixation is so unreliable and so likely to interfere with the process and termination of gestation that I consider it an operation not to be performed until the menopause has been passed.

The modified Alexander operation when the aponeurosis of the external oblique is split, in the same way as for the radical cure of inguinal hernia, and the round ligament taken up and

shortened as it enters the canal instead of at its point of exit, is a rational and in a fair percentage of cases successful operation. In my hands, however, the intraperitoneal shortening of the round ligament through an abdominal incision is by far the most rational procedure and has been most successful. In women who have passed the menopause the problem is somewhat simplified, for here we can do more radical surgery. The ovaries and tubes can be removed, thus shortening both the round and broad ligaments. Ventrofixation can be added without fear of subsequent trouble, if with little hope of additional good. Large boggy uteri can be amputated or removed in toto, if the condition is serious enough to justify it.

Prolapse of the uterus and especially when associated with rectocele and cystocele is an unfortunate state of affairs and one in which the attending misery justifies almost any procedure which offers positive relief. I have recently operated upon such a case where I did ventrofixation, anterior colporrhaphy, and repaired a torn perineum, only to have the condition return within two months. I propose to do an operation upon her which I think is new and which seems to me to be rational and practicable. I intend to open her abdomen and do a supervaginal amputation of the uterus. After the peritoneal flaps have been stitched over the stump I will bring down the stumps of tissue which include the remains of the broad and round ligament and stitch fast to the top of the peritoneum covering the uterine stump. It seems to me that the support thus afforded to the remaining portion of the uterus, so materially decreased in weight, will

correct the prolapse of the uterus as the prolapsed vagina, cystocele and rectocele have already been corrected.

In the operation of ventrofixation we must depend upon permanent adhesions between the uterus and abdominal walls for a successful result.

The causes of failure are due to several facts, the attenuation of the bands of adhesions and to absorption of the adhesions, the former leaving

a prolific source for an acute internal obstruction, the latter a complete failure of the operation. Nature in most instances, as time elapses, removes adhesions. This is demonstrated time and again when operating for other conditions, an abdomen which was previously filled with dense adhesions is found to be free. It is a noteworthy fact that adhesions surrounding a fistula are never absorbed.

1634 WALNUT STREET.



SUPERSTITION AND SCIENCE IN MEDICINE.¹

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WHEN the committee having such matters in charge placed at my disposal the opportunity to participate in the ceremonies of this evening, I found myself without the necessary moral courage to resist the temptation. I knew in a certain sense what would be going on and I wanted to be in it, although I realized that neither my limited abilities nor the time at my disposal would permit me to prepare an address worthy either of this important occasion or of the cultured audience that now honors—I may almost say, embarrasses me with its attention. I had long been under the conviction that there were certain things which I wished, and very much wished to say to a popular audience assembled to see the doctorate in medicine conferred by a distinguished institution upon a class of worthy candidates. All the conditions are here to-night. When, however, I found myself confronted by their imminence, I discovered that I was very much in the position of the rustic at a rural debating society, who, when called upon to discuss one side or the other—no matter which—of a stated question, stammeringly began by saying, “Mr. President: Concerning this question, I think—I think—that is I thought—I mean to say I think I thought—or rather I think I thought,

I thought—but ’tarnation ’f I kin do it now”—and subsided, just as I fancy I might do without depriving you of any other pleasure than that of anticipation. The touching example of my bucolic friend embarrassed me for a long time by intensifying my native modesty and humility, traits which I fear have been too largely supplanted by assurance, persistence, pertinacity—I fear some irreverent person will more than whisper “cheek!” But if this psychic transformation has taken place in your orator permit him to frankly avow that it is the result of long and intimate association with some of the distinguished gentlemen who now surround him on the stage. However, in the language of the philosopher, “we shall let that pass,” which is more than I shall do for you, ladies and gentlemen of the audience. The fact is that, although I may have forgotten the things which I had long intended to say, I cannot resist the opportunity to engage your attention for a while with some thoughts, some reflections—may be some ideals suggested by the ceremonies to which we have been delighted witnesses.

One of the thoughts that comes to me unbidden on such an occasion as this is, what would be the condition of society if there were no such exercises as these? What, indeed, let me ask, would be our condition, as a society, if there were no medical profession? Even if we do not consider the whole state of society, still in what

¹ An address delivered at the Fifty-fourth Commencement of the Medical Department of the University of Buffalo, April 27, 1900.

state would be the healing art? How may we answer this question? It is obviously unfair to take the crude notions of inferior races as criteria; it is, however, perfectly proper to take the primitive notions of medicine as they exist in the minds of primitive representatives of superior peoples—I now allude to those people of whatever social grade who live in the midst of civilized communities, whose intellects are not illumed with the intelligence which constantly radiates from the medical profession. Their crude conceptions, comprising what is properly designated as "folk-medicine," have been collated, classified and studied. By the light of that research I am enabled to give you some idea of what would comprise medical teaching, if it were not for the medical profession.

Let us imagine that I am your professor—your Professor of Folk-medicine—and that you are my students. I am about to lecture to you and I begin thus—remember, now, there is no medical science as we to-day understand it, but I have gathered together the knowledge of the world on diseases and their cures and I am giving you the first installment of that wisdom. Well, remembering this we begin:

"You have assembled to-day to learn how to keep away diseases and how to cure them. But before you can do this you must find out what causes them. To begin with, as everybody knows, there are spirits—I am not now alluding to the Kentucky article—there *are* spirits; and among spirits there is a Great Spirit that is above all the other spirits. We are born and we die by the grace of the Great Spirit, for he not only giveth but he taketh away.

All diseases are efforts at death, and hence are caused by the spirits. When diseases don't kill us it's because the spirits want to punish or persecute us rather than destroy us. When a person dies his spirit goes to the spirit world and becomes powerful, more powerful than it ever was in the flesh. Now that you understand spirits you will see at a glance that diseases must be caused—*are* caused in one of three particular ways, viz.:

"*First*—By the anger of an offended spirit that has been liberated from its earthly abode.

"*Second*—By the displeasure of powerful spirits that always have belonged in the spirit world.

"*Third*—By the enmity of a spirit, yet abiding in human form, but which has acquired superhuman power by organizing a trust under the presidency of the devil—(keep your eye on the devil; he is an important factor in our philosophy—in fact, we couldn't make it hang together without him).

"Now, spirits,

"Whether gods of high or low degree,
Or those of men by death set free,
Move in a mysterious way their wonders to perform."

"Having all power they can do all things. They speak and work often by entering into and assuming the form of stones, trees and bushes; they speak in the rustling of the wind and in the babbling of the brook; they may take the form of chirping birds or of lowing kine; but they much prefer to operate through the instrumentality of warlocks and witches, wiseacres and wizards, sorcerers and soothsayers, magicians and magnetizers. They are especially effective if they can borrow the

wrinkled visage of some old crone, although they often work sad havoc by assuming the form of a lovely miss—an axiom which is not restricted to the annals of folk-medicine.

"Now, ladies and gentlemen of the class, having settled the question of the causation of diseases, it only remains for me in this introductory lecture to speak of the general principles of cure. Remember 'tis but plain logic that to cure a disease we must have power to influence or circumvent the spirit that causes it. Now, one of the easiest ways out of the dilemma is to fool Mr. Spirit, by giving the disease away, transferring it to some object, animate or inanimate. Let me illustrate: A Scotchman goes to the cross-roads, lifts up a stone, rubs his warts upon it and replaces it, saying:

" 'A'm ane, the warts twa,
The first ane it come by
Tacks the warts awa.'

And the first poor chap that happens to pick up that stone gets the warts. A gouty old German goes on three successive days to a fir tree and says: '*Tannenbaum, ich klage dir, die gicht plagt mich schier,*' after which the tree withers and the gout is cured. So eminent an authority as Pierius advises that a patient may transfer his disease to an ass by sitting on the animal with his face to the tail.

"But, ladies and gentlemen of the class, I must hasten with my theme. As we progress in the treatment of particular diseases, we shall discover many powerful agencies for overcoming our spiritual tormentors. We may escape them by going through the form of a new birth. We may placate them by offering sacrifices, or we may invoke the power and protec-

tion of our Lord, to say nothing of saints, both male and female. We may frighten away the evil spirits by the terror of the grave, by the charm of color, by the magic of numbers. We have at our disposal the powerful agency of the sun, moon and other planets. Herbs and roots and salves and teas will cure if but properly prepared by charmed hands. Animals have strange powers to cure, as is well known to every Scotch lassie who has cured her styte by rubbing it with the tom-cat's tail. Then, too, there are among men those of peculiar power. You all know the charm that lies in the seventh son, while the seventh son of a seventh son hath power increased with each succeeding generation. But remember that the third seventh son—this is the twenty-first son of the same parents—hath, and, I contend, of right ought to have power to cure anything on earth."

Now let me drop my character as Professor of Folk-medicine and resume that of your orator, at least long enough to assure you that what I have just said must in the light of careful and scholarly research by members of the Folk-lore Society, notably by Mr. William George Black, be accepted as a reasonable syllabus of an introductory lecture on medicine, were the medical science of to-day unknown. I fear, however, that I have not made myself sufficiently clear. What I have said has been too much in the nature of glittering generalities. Permit me to pass from the abstract to the concrete. The class will again come to order while I resume my instructions by taking up some diseases in the treatment of which will be illustrated some of the general principles which I have enunciated.

I shall lecture now on the cause, prevention and cure of a very painful and a very prevalent disease—toothache. You all appreciate its importance. Shakspeare tells us in "Cymbeline" that "he that sleeps feels not the toothache," but he fails to tell us how anybody on earth can sleep who has it. He comes nearer the truth in "Much Ado About Nothing," when he says,

"—there never yet was philosopher
That could endure the toothache patiently,"

by which he would have us conclude, I infer, that he who makes ado about toothache makes ado about something.

Burns with an accuracy of knowledge that suggested personal experience observed :

" When fevers burn, or ague freezes,
Rheumatics gnaw, or colic squeezes,
Our neighbors' sympathy may ease us
We pitying moan ;
But thee, —thou hell o' a' diseases,
Ay mocks our groan ! "

This disease which so disturbs philosophers, upsets poets and curses everybody, is caused by a spirit taking the form of a worm. Everybody knows this, for everybody can see how the hole that the worm bores into the tooth is like the hole that a worm bores into a tree. The toothache is caused also by the devil—which nobody will deny. In Norfolk, England, they call toothache "love pain," and say that it is caused by love—but your professor has never found it work that way.

This disease may be prevented if proper precautions be taken. To do this wash the baby's mouth with sanctified water remaining after a public baptism, and when grown it will never have toothache ; or wear about your person one fore-leg and

one hind-leg of a mole ; or wear simply a cord around your loins. Sensitive young ladies may be forever free from this torment if they will only wear in a little bag suspended around the neck a tooth taken from the mouth of a corpse ! If, however, they are the least bit squeamish about adopting this formula, they will be relieved to know that one equally efficacious and more convenient is reported from Sussex. It reads as follows : "To prevent toothache put on the right stocking before the left and put the right leg into the trousers before the left—(on reflection it would seem that the latter part of this prescription is intended for the other sex). In either event it is more to be recommended than a charm of sealed paper worn with great success for several years by a young lady of Chelsea, and which when opened was found to read :

"Good devil, cure her and take her for your pains."

Now, having discussed the cause and the prevention of toothache we come to the more important question of cure. There are many cures. The first thing is to get rid of the tooth-worm. To do this take *old* holly leaf, the *lower* umbels of hart-wort, the *upward* part of sage ; boil two parts to one of water ; pour it all into a bowl, and yawn over it, when the tooth-worms shall fall into the bowl. If this is not handy, spit into a frog's mouth and ask him politely to make off with your toothache. Or, prick your gum with an iron nail till it bleed ; drive the nail with the blood on it up to the head in an old oak beam, after which you'll never have the toothache again. An easier way, however, is simply to invoke the

aid of St. Appolonia or St. Lucy ; but to do this you must know the proper prayer. This may be difficult to remember, so you needn't bother with it if you will only have the patient pull, with his teeth, a tooth from a skull ! Or you may have him apply some vinegar in which a serpent skin has been soaked, or point the points of three hot smoothing irons three times at the aching member. Or, finally, if you have the toothache and wish not only to cure it but to keep it cured for a year, go into the woods and bite off close to the ground the first fern seen in the springtime. And if none of these things should do, have the sufferer to understand that there is no such thing as matter, there is no such thing as pain ; tell him to nurse his piety, to keep it warm, and, as for yourself, get out of the way before the explosion comes.

It was my intention to discuss the treatment of a few other diseases, but I discover that to do so takes more time than is at my disposal. I had accumulated careful notes on the treatment of, for example, whooping cough. This is a disease which calls for diverse remedies : Wrap a spider in a piece of muslin, pin it to the mantlepiece ; when the spider dies the disease will be well. Dig a hole in the meadow, cutting away the sod in a single piece ; into this hole place the afflicted child in a stooping posture and cover it up for a few minutes with the piece of sod ; as soon as the child is heard to cough it is removed, when the cough is surely cured. Pass the child over and under a donkey three times, or in a bad case, thrice three times ; or, *nine* stones shall be taken from a stream of *running* water, heat them red hot, drop them into a quart

of water from the *same stream*, bottle it and give some of it to the patient for each of *nine* mornings. Or tie nine knots in a string and hang it around the patient's neck ; or follow *any* advice that may be given by a man riding a piebald horse. Or have the child eat some currant cake from the hands of a woman who has married without changing her name ; or better still, from a woman who, after having been a widow, has regained her maiden name by a second marriage. If currant cake is thought unwholesome, or if you can't find a person of the above description from whom to receive it, just let it go, but give the victim a diet of fried mice prepared by just any old body. There are numerous other valuable remedies but these are chiefly to be relied upon.

I can't let this audience—I beg pardon, I mean *my class*—separate without giving some timely advice as to how to cure rheumatism : Take frog's spawn, put it in a crock, cover it with a slate, bury the crock for three months in the garden, then take it up and rub the pains, or I should say the parts in which the pains are located, with what you find in the crock. Beg or steal a chestnut, but don't buy or permit anybody to give you one—and this is no "chestnut." Keep a pet snake—from which, as a rule, no danger need be apprehended as rheumatic patients are liable to have taken abundant liquid precautions against snake bites. If, however, there is any delicacy on the subject—particularly on the part of the ladies—the same object may be attained by wearing a snake skin around the neck, or as is done in New England, take the old cat to bed with them !

There are many other diseases that ought to be lectured upon, but time will not permit. I might tell you how to cure corns by putting on a boiled potato; how to cure deafness by plugging the ears with black—not white—wool; how to cure headache by snuffing powdered moss taken from a human skull; or how to cure hiccough by crossing the front of the left shoe and the forefinger of the right hand and repeating the Lord's Prayer backwards! This is, indeed, a sure cure, as there are many other sure cures, but I can't discuss them to-night—it is too late and there are some other things I wish to say to my class.

Thus ends the lecture on folk-medicine—a lecture, fragmentary as it is, which is given to this cultured and refined audience only to show what would be the state of the healing art if there were no such thing as the medical profession. "But these are absurd old-granny cures," you say. "These things belong to crude, primitive, ignorant peoples, and, if they ever did exist, they are no longer to be found in the midst of our modern civilization." Not so fast! Ask any gentleman on this stage to-night how often he encounters absurdities equally as grotesque in his daily rounds! Ask him whether they always occur among the poor and the ignorant! He will give you not only a direct answer to each interrogatory, but he will tell you, if he gets a chance, that general education is no criterion of intelligence on medical questions; he may even go further and tell you in a perfectly confidential way, that in his visits to our modern palaces, quite as much as to humbler abodes, he is chagrined, sometimes

discomfited at the mischievous presumption of what Pope described as

"The bookful blockhead ignorantly read,
With loads of learned lumber in his head."

But I will not ask my colleagues to take the witness stand—they are such modest gentlemen—and I will take you into my confidence to the extent of telling you that I have been brought here just to say some things that their "modest stillness and humility" would not permit them to say themselves. Now, this being true, let me continue to question your assumption that folk-medicine is entirely a thing of the past. It is granted that happily it no longer exerts a controlling influence, but is it true that it is a thing of the past? Is it true that the superstition that inanimate objects have the power of warding off disease no longer obtains? My venerable friend up there just tells us about that old, dried-up potato that you have been carrying in your pocket for fifteen years to keep away the rheumatism! Is it true that a belief in the magic power of color no longer exists? How long has it been since the homes of the rich and cultured of this city had a south window ornamented with a pane of blue glass just to cure certain diseases and to keep away others? And, now that we are about it, just tell us frankly—it won't go any further—how many of you who are here to-night show your belief in the magic of color by wearing garments which, at some stage in the act of disrobing, cause you to stand forth like huge sticks of red sealing wax? You aver that religious fanaticism with its attendant invocation of the power of saints no longer cuts a figure in the realm of popular cure? What about the pilgrimages to St. Anne's? What

about the annual hegira from Paris to Lourdes? And, tell me frankly, how many are there in this city—how many of your wealthy and reputedly intelligent citizens—who are to-day disgusting worshipers at the shrine of St. Eddy? May we not exclaim with Shakespeare,

“Look how the world’s poor people are amazed
At apparitions, signs and prodigies!”

And well may the wretched victims of this nauseous fauaticism exclaim with Crabbe:

“Man yields to custom, as he bows to fate,
In all things ruled, mind, body and estate;
In pain, in sickness we for cure apply
To them we know not, and we know not why.”

But if these influences do obtain in society, as already observed, they are no longer dominant, but are to be recognized as mere survivals of primitive conceptions which are destined to yield to the corrective influences of progressive evolution. If we now turn to this phase of the sociological question—another thought suggested by the ceremonies of this evening—we are at once prompted to inquire whence came these influences? How were they set in motion? In what guise were they first manifested? Through what transitions have they passed? In what form do they appear to-day? What may be expected of them in the future? It is interesting to picture to the mind’s eye a primitive people in a state of primitive equality, or, as the scientists say, of primitive homogeneity. It is interesting to fancy these people with equal capacities, equal powers and equal functions; and then to imagine the accidental circumstances that make one thing of one man and another thing of another.

Mr. Herbert Spencer has interestingly traced this evolution, taking as

his example a tribe of American Indians. Living as they do chiefly by the chase, an early necessity which they encounter is the means of killing game, and, let us say, each man provides himself with arrows for the purpose. Presently one of the number, as the result of accidental influences or conditions, discovers that he can make better arrows than can his fellows. They, in turn, desiring the best implements, go to him for their arrows, for which they compensate him with mats or baskets or fishing gear; while he, stimulated by reward and the distinction implied by patronage, restricts his labors to his new-found task, improving his product in excellence with that increasing skill which comes alone from practice. The influence is reciprocal and its widening range is noticed in the improving quality of the mats and baskets and fishing gear made by those who find it no longer necessary to make their arrows. Here is the multiplication of effects from an initial cause, and here too we observe the commencing specialization of function and of labor exemplified among the most primitive peoples. What is true of these simple folk is true in a more pronounced degree throughout the increasing complexity of civilized society. So true is this, that to-day there is not a single department of human activity, there is not a single product of human labor, mental or physical, but is dependent for its possibility upon numerous other highly-specialized human activities. The telegraph, the telephone, illuminating plants and hydraulic institutions are but a few—a very few—other examples made possible only by employment of highly-specialized human skill. From these observations

we are forced to conclude, with that master-genius who has formulated with such clearness the philosophy of evolution, that a "part-cause of evolution is the multiplication of effects, and that as this increases in geometric progression the heterogeneity becomes greater"—conclusions which are not only "established inductively, but are deducible from the deepest of all truths."

But if primitive people required arrow-makers or fabricants of other implements, other necessities speedily arose, chief among which was attendance on those who were injured in the chase, who were wounded in battle, or were sickened by the effluvia of the primeval swamps. It was at this point that your progenitor, "the medicine man," stepped upon the scene. He is the necessary and inevitable incident of every primitive people. The Egyptians had their sages, soothsayers and pastaphori; the Persians had their genii; the Phenicians their cabiri; the Hindoostanese their vaidyas; the Tartars, their shamans; the Scythians, their enares; the people of Borneo and Sumatra, their serpent-charmers; the Zulus, their rain doctors and thwalas; these are among the examples of the earliest formation of the medical branch in the social segmentation of primitive people.

The story of the evolution, the development, the progress of the curative arts is a long one, an interesting one, and one that I am glad to state has been told in a fascinating way by the distinguished Professor Park of the faculty of this institution, and it is a story in which other great names, once connected with this institution, occupy honored places. I cannot re-

sist the temptation to mention Flint and Hamilton and White and Moore and one that is especially dear to me—Charles A. Lee; but I must not prolong the list, nor can I take the time to retell the story, which can be read of all men. Permit me, however, to pick out, here and there, some instances, some events, some characters which have had epoch-making significance in bringing to you the priceless beneficence which you daily receive at the hands of this majestic profession.

Go with me, if you will, into a classic abode in the most classic city of history. Enter and behold an old man, in whose eyes are the scintillations of genius and on whose brow is the imprint of wisdom. Those about him attend with eagerness. The great Hippocrates is teaching! What are his words? Many are recorded and may be read of men. His voice gives accent to a protest against the very kind of medicine which, as I have indicated, is inherent in the untutored mind. He is protesting against the sacerdotal or priestly medicine, then, as in all other ages, the curse of men. He is directing attention away from the mystical, the supernatural, the superstitious to those material elements, the inter-relationships of which comprise the state of health and of disease in mankind. His edict put an end to the functions of the ecstatic or trance doctors, and of Juno, Apollo, Artemis, Zeno and others of the gods and goddesses; put an end to the pretensions of the pagan priests in the realm of cure and established a profession neither biased by preconception nor blinded by dogma, but honestly devoted to the study of phenomena and of conditions. This

one central, or rather seminal thought has blossomed throughout the ages for more than two thousand years and bears rich fruitage to-night in the splendid class upon which has been conferred the most honored Doctorate in Medicine.

Come with me down the vista of time, three hundred years. We are sauntering in one of the superb streets in the imperial city on the Tiber. We seek the advice of the most distinguished physician of his age, and one whose personal influence and authority has extended over the world-wide empire, and one who on the day of our visit is destined to exert a greater influence over the minds of men and the welfare of humanity than was ever before or than has ever since been attributable to a single man. He has returned from an extensive tour of professional study; he has attended the instructions of the great physicians of Asia Minor; he has imbibed wisdom in the Garden of Gethsemane, and he has reveled in the accumulated lore in the great city of Alexandria. His genius is aflame, for he has detected the errors of the older philosophers, to the teachers of whom he is already teaching that there are indeed strange things in heaven and earth yet undreamed of by them. The study of life, that great, that overwhelming phenomenon, which has stood for solution before the acumen of mankind, is his theme. He seeks to study life—not by studying something else, but by studying *life*. He inaugurates in a scientific way the study of these complex phenomena upon living animals—the first of the world's great vivisectionists. He is discovering the functions of the nerves, he is dissecting

the muscles, he is making known the character and functions of divers and sundry organs; he is establishing the whole science of experimental physiology; he is teaching those about him to respect truth, demonstrated physical truth, rather than accredited and enthroned authority. He is the rational iconoclast of his age, and he is founding the most wholesome eclecticism that has irradiated humanity. He has done all of this by methods which, strange as it may seem—for our point of view is the second century of our era—are destined in the year 1900 to be denounced by a band of morbid and noisy polemics, calling themselves antivivisectionists, whose ignorance is only exceeded by their fanaticism, but who seek to make their protests against scientific investigation effective by promulgating them under the shibboleth of humanity.

Go with me now to far-away Bokhara; seven hundred years have elapsed since our last visit to a doctor. The world has long been wrapped in its deep, deep slumber, under the sombre shadow of the cross; the knowledge of Hippocrates and of Galen have been hidden away in the monasteries, and the healing art has again been usurped by the wearers of the gown and cowl. Here, however, under the protecting influence of the crescent we find the genius of his age, raising aloft the light that shall presently permeate the darkness of the West, through the rifts that are now being made by the masterly hand of Charlemagne. He has been deeply taught in the wisdom of the far-away East, and he has stored the medical lore of the Arabians, among whom he has sojourned; he is dwelling amidst a priesthood as fanatical as that which

was propagated from Sinai and from Bethlehem, and as deeply imbued with superstition as the followers of Confucius or those of Gautama Buddha. The unquenchable fires of Zoroaster have not illumed the intelligence of the Orient. He whose counsel we now seek has raised his voice against the superstitions of the Vedas; he has denounced the priests for attempting to cure disease by saying:

"Ye breezes healing blow, and waft his pain away,
The gods have sent you forth with stores of healing drugs."

He has denounced the ignorance of the Mahommedan priesthood; he has dethroned the Koran as a reliable treatise on medicine, and on the day of our arrival we find him in prison at Ispahan, where he has gone for his pains. As we enter we find him forging his thunderbolts, not in the terms of anathema, but in the terms of logic far in advance of his age; he is gathering together the knowledge of the Hellenic school; he is distributing it among his own people, from whom it is in turn gathered by the Crusaders, and by them brought as precious gems to the yet slumbering peoples on the eastern shores of the Atlantic. We are in the presence of the great Avicenna.

Five hundred years have elapsed before we again have occasion to visit a sage of the healing art. We find ourselves in picturesque Switzerland. The clouds of the middle ages have rolled by, but authority under the leadership of the Church is still enthroned. Such and such a thing is true—not because it is intrinsically and obviously true, but because the Pope proclaims it true. This comparatively young man whom we

are now visiting tells us that "he who wishes to investigate nature must tread her books with his feet"; he tells us that travel supplies more information than sitting by the fire-side, and, like the echo of a voice that has been stilled for a thousand years, he affirms that "the first schoolmaster of medicine is the corpus and the materials of nature." Again do we see the banner of science and of reason raised aloft and again do we find the antagonism of the sacerdotalists visiting vengeance upon him who valiantly carries it into their midst. From this Alpine height, however, the insignia is seen from afar. We take our departure imbued with a new inspiration, with a fresh enthusiasm imparted by the genius of Theophrastus.

A half century later we cross the stormy channel and land at the Kentish town of Folkestone. Here we again find a young man who has just returned from Padua. In his journeyings and sojournings he has everywhere encountered that active, vibrant intelligence so characteristic of the Renaissance. But he is thoughtful and studious. We follow him as he is called from his humble home to the wards of a great London hospital. We follow him as day by day he teaches first one phenomenon and then another upon the living animals. We hear his modest words and listen to him as in his struggle to find the truth he denies to-day that which he affirmed yesterday. He continues to investigate with no thoughts of personal pride, but with absolute devotion to the interpretation of the hitherto inscrutable secrets of nature. We see him as he offers the censors of his native country his modest contribution to knowledge. We see them corrugate

their brows into interrogation points and behold, with amusement, their consternation as they discover an idea. This is a rare experience for a censor. It is one which always calls for an adverse verdict, and thus it is that England loses the honor of publishing the great truth evolved from the world's mysteries by the savant whose footsteps we are now following. We find him sending his manuscript to foreign shores, there to be given forth in undying print. We see him ostracised by society, we observe him a fugitive from the metropolis in which he labored and loved, and we stand by his side as in old age he dies, his face wreathed with the smile of triumphant genius. The great truth which he had heralded was the circulation of the blood, and he who heralded it was William Harvey.

But the evening will not permit us to take many more of those happy journeys. It is a pleasant occupation indeed, thus in fancy to loiter about the haunts of genius. We, however, must desist from that pleasant occupation, for the evening grows apace. I cannot, however, resist the temptation to have you join me in a short pilgrimage to a little American city, almost a hamlet. This is only a little jaunt, for we have but to retrace our steps less than a century. Here we find one of those dignified, courtly, scholarly gentlemen of the old school. For in those days your gentleman was a gentleman with a grand manner, *l'air de noblesse*. We see him receive into his study a woman, worn and pale with long journeyings. She has come from over the mountains and through the forests to consult him with reference to the relief of a malady with which she is afflicted, and of which no woman

in all the world's history has ever yet been cured. He lends attentive ear to her story and investigates with studious care all the features of her distressing case. He tells her that his beneficent art has not yet brought succor to such as she. "But," continues he, "I think you may be relieved and cured, and with your permission I will try." We see her with the heroism of a Spartan mother yielding to the ordeal, which may restore her to her family, or waft her soul to the realm of Nirvana. We tarry to watch the course of the intrepid surgeon; he communicates his intentions to his colleagues, who, encountering a new idea, are as naturally against it as the modern Irishman who is "agin the government." The operation is undertaken; it is carried to a conclusion; the anxious days of watching ensue; the color comes back to the cheek of the suffering patient, and tender care beguiles her back to health. The precedent has been established whereby more women have since been saved to humanity than were soldiers slaughtered by the ambition of Napoleon. Ovariectomy was an established fact and on the scroll of fame was inscribed the name of Ephriam McDowell. It would gratify me greatly to go over the great roll of honor—to mention the very names of which, even without recital of circumstances or word of eulogy, would comprise more time than many here will devote this night to slumber. But the heroes are not all dead; greatness has become so common that it excites no comment. Its benefactions have become so universal that they pass unrecognized. How many of you, for instance, have thought of the great service that you received directly and

indirectly from the distinguished profession that ministers to your daily ills? I would not accuse a person within the hearing of my voice if they were to experience a deep sense of gratitude for that minister of health who comes to the bedside of the afflicted and as if by magic alleviates pain and dissipates danger.

What husband but that appreciates to the fullest the skilful service that has restored from the surgeon's knife the wife and mother of his household? What mother but that visits the very benisons of love upon him who restores to her bosom the child of her heart? But great as are these blessings, great as are these benefactions, they do not comprise a moiety of the good which you as a society, as a community, receive from the hands of the medical profession. The indirect benefits which you never consider bring you health and happiness. What has relieved your city of the miasmatic conditions which at one time made it almost pestilential? Who has promulgated the science of sanitation, until your water supply is safe, your homes are not invaded by infection, your schools are not the desseminators of disease, and your hospitals are not charnel houses?

Who is it to-day that stands valiantly at your seashore and represses those pestilences that come like hidden invaders alike from tropic and orient? Who is it that during the century now closing has added a decade to the time allotted to a generation? This has all been accomplished by the profession that with joy receives you to its folds—these well-accredited young gentlemen. It is the very medical profession which more than any other one influence has brought renown to your

city. What is your attitude toward that profession? Your presence here to-night, your generous and appreciative patronage of your distinguished practitioners, and the splendid edifice which you have supplied as a seat of medical instruction in your midst, are testimonies to your intelligent support of a learned profession.

And now I come to the other thought which has been suggested by these ceremonies, and that is that you are still in debt—kind and generous as you have been, you still owe for much that you have already received, for no cash equivalent can balance the account. You, however, can do much—not alone for the medical profession, but by increasing their opportunities for efficiency, you may thereby increase many fold the benefactions which come from that profession to you. I ask you to bear in mind that splendid architecture does not in any particular sense comprise a medical school, although it may furnish facilities for medical instruction. A medical faculty consists of gray matter rather than of gray stone. Gray stone crumbles with time and gray matter indeed perishes; but gray matter during its existence as such is a productive material. It yields dividends of greater general value than either railroads or industrials. It yields an interest larger than is ever printed upon a coupon. Invest, therefore, in gray matter. You can do this most effectively by endowing professorships in the medical department of your university. There is no institution in this country in which endowments are not seriously needed. I bring to your attention to-night the fact that the purely scientific branches of medical study, notably those of chemistry,

physiology, pathology and bacteriology, require for their proper teaching the exclusive time of their respective professors. The reputation acquired by teaching these departments does not yield an indirect compensation in the form of private patronage. The stipend yielded from the tuitions paid by students is never an adequate compensation for the service rendered. I ask this community, therefore, specifically and directly to endow professorships in these two departments. He who endows a professorship and thereby associates his name with a department of learning creates for himself a monument more honorable and more enduring than that which others build of bronze or stone. Do not, I implore you, permit this great opportunity to pass unimproved. I don't mind intimating to you that the honored president of your university is ready to receive your checks at any time.

And now, gentlemen of the graduating class, but a word to you. I come from a field of toil to spend a pleasant evening with you, but I regret not the toil—much less the evening. It is usual on such occasions as this to follow either one of two courses: either to depress you with a pessimistic outlook, or beguile you to a sense of false security, by holding up to your expectant vision a promised land abounding, if not flowing with milk and honey, yet yielding harvest of splendid corn and rich yellow pumpkins. I neither

admonish you by words of disparagement, nor stimulate you by unreasoning panegyric. You are coming into a noble and honored profession, you are living in a rich and an enlightened country, you are the members of an advanced and progressive society, and you are the exponents of a civilization which more distinctly than any other one is spreading its benefactions to all peoples of all lands. You to-night come into the possession of a great heritage. It rests with you whether you shall make much or little of either yourselves or your opportunity. I only ask you to remember a few things. What man has done, man may do. Beginning where men have left off, other men may do more. Study yourself carefully and learn not only to know, but to know that you know, and to know what you know and to know what you don't know. Practise a severe introspection, and where you find a defect, correct it; but wherever you find a virtue, practise it; wherever you find a power, exercise it. Within these limitations be strong, be firm, be self-assertive; and with a due regard for the rights of other people be aggressive. A truth known by you is just as much a truth as is the same truth known by anybody else. Hold these facts in your mind, cherish them deeply, study the masters, cultivate deep in your soul the spirit of your profession, be true to yourselves and you will never be false to anybody.

ST. LEGER PLACE.



NEW BOOKS.

THE SURGICAL DISEASES OF THE GENITO-URINARY TRACT, VENEREAL AND SEXUAL DISEASES. A Text-book for Students and Practitioners. By G. FRANK LYDSTON, M.D., Professor of the Surgical Diseases of the Genito-Urinary Organs and Syphilology in the Medical Department of the State University of Illinois; Professor of Criminal Anthropology in the Kent College of Law; Surgeon-in-Chief of the Genito-Urinary Department of the West-Side Dispensary; Fellow of the Chicago Academy of Medicine; Fellow of the American Academy of Political and Social Science; Delegate from the United States to the International Congress for the Prevention of Syphilis and the Venereal Diseases, held at Brussels, Belgium, September 5, 1899. etc. Illustrated with 233 Engravings. Pages xvi-1024. Sheep or half-russia, \$5.75 net. The F. A. Davis Co., Publishers, 1914-16 Cherry St., Philadelphia, 1900. Price, \$5.00.

Medicine being an inexact science it seems only natural that medical men must differ upon certain things. Hobbies, which are so prevalent in these days, are well exemplified in the ranks of the profession, and these same hobbies are often ridder to the exclusion of common sense. This one characteristic, together with the undeniable fact that most books of this nature are simply revisions of antiquated editions, has been eliminated by Dr. Lydston. In the preface the author says that his work is designed for students and general practitioners, but such a valuable book must not be confined to these readers. The specialists who undoubtedly control the great majority of these patients should give their

patrons the advantage of modern, intelligent and conservative opinions. The author invites confidence in the first few words, when he states that success or failure is often determined by the intelligence used in the comprehension and application of principles.

The first chapter, which is devoted to hygiene of the organs—which, by the way, is the keynote to the successful management of any genito-urinary or venereal disease—contains all that the most skeptical could ask for. To be sure, Lydston suggests things that cannot possibly be carried out except in the smallest number of cases; but to have these principles well instilled into the mind so as to use them when possible, amply repays one for the time spent in a careful study of this chapter. The author, although it must have taken some little backbone, states that the various standard treatises devote very little attention to the special characteristics of the urine. This statement, though painful to express, is positive truth. For their failure he has amply made up.

In fact, without going too deeply or making the subject impossible of comprehension, especially for the class for whom he advises his work, Dr. Lydston's chapter on the urine is of inestimable value, and will be found of the greatest aid, even though one may never have cause to touch the knife to these organs. It is a pleasure to read words that convey the information that if the urethra is made aseptic or as nearly so as possible, infection rarely follows, and in this he not only refers to cutting instruments, but to the use of any instrument, even a filiform bougie. Were this statement grasped as it should be by the profession it would be possible to almost

eliminate the chapter upon urinary infection in the second edition of his book.

In Part II. the author considers non-venereal diseases and diseases of the skin. The general instructions as to cause, treatment, etc., are so carefully and conscientiously given that it savors of many successes before concluding upon what was best to advise. In taking up that great subject, gonorrhea, the author says, although his statements may be received with derision and ridicule, "I believe that innocent infection is possible." In making this statement he describes the public closet, and, admitting the fact that gonorrhea is quite prevalent, it is pertinent to ask what is to prevent a drop of pus being deposited upon the seat where the genital organs may come in contact with the same? Although such infections are rare, there is no doubting their occurrence. The reviewer has seen mother, father and child infected where the most careful investigations positively pointed to a water closet as being the source.

Lydston says: "Gonorrhea is the most dangerous of the venereal diseases, for, through the medium of its sequela and complications, it causes more deaths than syphilis." What a load of suffering would be lifted from the heads of the human race if the above words could reach, and be understood as they should be, not only by every physician, but the laity as well.

In speaking of the treatment, he says: "The statement of surgeons who claim to cure a case of virulent urethritis in from a week to ten days, or perhaps less (the subject is brought down to the present day), are to be discredited." In speaking of the method of Janet, he remarks that the fallacy of most forms of specific treatment does not arbitrarily apply to his, providing it is commenced during the incipency and carried out for from three to six weeks. This seems to indicate (and from the reviewer's acquaintance with this method he concurs) that the author's

first few words (in regard to treatment) are sound, namely: "This is strong circumstantial evidence of its self-limitation," etc.

Injections, except for cleanliness or an anodyne effect, he recommends dispensing with during the increasing stage. Evidently the author is intimately acquainted with the condition of tissue upon which astringents may work, for he says: "Astringents which call for good judgment in using are advisable during the stationary stage, and at this time may be increased in strength." The various newer preparations are referred to, even to the latest, mercuriol. He wisely states it is yet too early to positively decide as to their merits as specifics.

In the treatment of that neurasthenic producer, chronic gonorrhea or gleet, Lydston advises that the urethra first should be explored, to determine, if possible, the particular lesion that is keeping up the discharge. It is the opinion of the reviewer that more brilliant and quicker results could be obtained if as much of the mucosa as possible was put in a normal condition, and then, when the urine, as it would, shows inflammation only at localized spots, the cause of this localized inflammatory condition be sought and removed. The author intimates that inflammation in most cases extends from the meatus to the internal sphincter. If this be accepted as truth, and it certainly ought to be, do not instruments, even bulbous bougies, cause not only irritation at the spot, perpetuating the general condition, but also of the entire mucosa? Better results would surely follow if the fire, or as much of it as is possible, was quenched, and then the cause sought for and removed.

In dealing with gonorrhea in women the author correctly states a fact, and for the first time so pointedly made, that vaginitis of venereal origin and even urethritis are rare occurrences. It is a fact that the absence of inflammation in these localities is the sole and only reason that women rarely know

that they are or have been infected. The author has wisely left the cases to the gynecologist after the infection has reached the tubes and ovaries. Although he refers to most infections taking place at the cervix, and also speaks of curettement, these points should be more positively emphasized. It is known that the cervical glands are always more or less involved and instead, as he says, "curettement may even be necessary." It should be; curette every case at a certain time and avoid if possible infection reaching the tubes, ovaries and peritoneum.

The description of urethral stricture is a masterpiece. There are suggestions put forward that should have received more space than is given them. In speaking of toxemia from stricture he says (page 205), "that the passage of instruments may precipitate toxemia is granted. The danger is enhanced by uncleanliness, but aseptic instruments may cause it. It is questionable, however, whether any instrument passed through a diseased anterior urethra can be aseptic by the time it reaches the deeper canal. It is probable that strict aseptic urethral surgery would involve the flushing out of the canal prior to the introduction of even an ordinary sound. This, of course, is not generally done, nor is it always practicable. Most surgeons, therefore, as a matter of routine, are committing cardinal sins from the standpoint of aseptic surgery."

Further on (page 210) Lydston says: "After exploration of the urethra for the first time the canal should be irrigated with a 1-5000 permanganate or 1-10000 bichloride solution to obviate possible chill and fever." Admitting the first portion of the sentence to be positive truth, why should the procedure not be advised in every case, not as the author states after exploration, when the débris and pyogenic cocci have been pushed almost if not into the bladder, but why not rid the canal of them before attempting any instrumental interference? In the diagnosis he remarks, and what

a truth, "The urethrometer will find a stricture in a healthy canal."

In the treatment, dilation, and the cases for this mode of procedure, is well explained. He goes further, and in italics names and describes the cases that should be cut. These are so in accord with the views of conscientious, intelligent surgeons that comment on them is unnecessary.

In Part IV. the doctor takes up the subject of chancroid, bubo and their complications. After a clear and interesting description of the origin, variations of and peculiarities of chancroidic infection, he takes up the differential diagnosis. With a most elaborate table, and description of the different forms that chancroid may be found to assume, he concludes: "After all that has been said regarding the differential diagnosis of chancre, chancroid and different lesions of the genitals, it must be acknowledged that it is never safe to pronounce against the possibility of syphilis in any indurated or ulcerated lesion upon the genitals." This he emphasizes by putting it in italics, and it is only just that he should do so, for many mistakes occur from just the very things Lydston has pointed out.

In regard to the treatment he advises or rather suggests that laws might be passed compelling the proprietors of licensed houses to submit their inmates to frequent and thorough medical inspection. Further on he remarks: "Prostitution cannot be prevented, nor is it certain that it would be wise to suppress it." All this is very well and the assertions are true, but the author might have added that in the law, a clause be inserted compelling such examination to be made by a person thoroughly acquainted with venereal diseases. As it is to-day, some prostitutes are examined, but gonococci are diagnosed microscopically, and chancre and chancroid are frequently missed, because the physician is not thoroughly acquainted with the localities the ulcers at times occupy. Lydston, however, wisely says, "that silver should

not be used on every ulcer, in fact had better not be used at all, as it produces more irritation and inflammation than already exist." Bubo receives ample attention, several pages being devoted to its consideration, and the author strongly advises when suppuration has commenced, or the bubo is rapidly progressing, to extirpate the infected gland or glands at once. This is sound advice and should be applied to every case.

To syphilis 182 pages are devoted, illustrated with 17 or 18 small cuts. Pictures may be of more importance than words under some conditions, but it is apparent that the author realizes that the only true pictures of syphilitic eruptions or ulcerations are obtainable by inspection of the living subject. In the place of cuts which take such a prominent part in most treatises on syphilis, the space is filled with brief histories of patients that have been under the author's care. Knowing the different phases that a syphilitic eruption is capable of assuming; and, further, that it is almost impossible to produce these on paper, it is a serious question whether histories do not teach more than plates, especially to one who has not had the opportunity of seeing the different eruptions of the skin as manifest in syphilis. After carefully considering the disease from history to treatment, he concludes under thirteen headings. If the knowledge contained in his few closing remarks could be so engrafted upon the minds of the profession at large, that they would abide by them, there is no doubt that tertiary manifestations would be a thing of the past and, with the help of the patient, a cure could be recorded in at least 99% of all cases.

Part VI. is devoted to sexual physiology, diseases of the function and in fact everything pertaining to sexual life. To one who has not made these subjects a careful study, much of this portion of the work might sound like fiction. But it is far from it, for every word shows the keen observation of a man who understands his subject. One

suggestion, although not advanced for the first time, is the advice that wise counsel to young lads in sexual matters would do more for the morals of society than any amount of preaching.

Prostatic involvement receives careful attention, the author bringing out very prominently measures, which on account of the secondary irritation produced by them, should be discarded. More stress should have been laid upon the psychic disturbances accompanying chronic prostatitis. In speaking of acute cystitis, Dr. Lydston states that exposure to cold and the like may be an etiological factor, but all cases of inflammation of the bladder are due to bacterial infection. He aptly brings out the fact that the bladder is often accused of being the seat of trouble, when in reality this viscus is in a healthy condition and the disturbance is in the posterior urethra. No mention is made of silver in acute cystitis. There is no doubt that this drug in proper proportions is far more efficacious than either permanganate or bichloride.

It does not seem to the reviewer that the advice regarding the use of cocaine and morphine, as recommended by the author, is altogether safe. During the acute condition there must be more or less abraded surface at the urethral opening, for at every act of urination there is blood that surely comes from this locality, hence danger of cocaine poisoning. Lydston discourages local treatment in tubercular cystitis. This is good advice, and means actual experience with cases. However, in that form that may be described as mixed infection, local remedies do great good for a certain time. Regarding the surgery upon the genito-urinary organs, the author has given but very few new suggestions. He has wisely advised the perineal route for stone in children, evidently taking into consideration the smallness of or only rudimentary prostate in these little patients. Nephrectomy is favored as a primary measure in conditions of the kidney where the organ must ultimately be sacrificed.

But very few lines are given to the operation of prostatectomy. There is no doubt that this operation has a very valuable place in surgery, and has come to stay with us. It should have received more consideration from the author. No comment can be made upon that portion devoted to venereal or sexual diseases, hygiene, etc. The opinions advanced by the author are very valuable, many of which are entirely new.

To sum up: this is a valuable work, one of the best that has yet been issued on the subjects with which it deals. There is a decided place for it, and we bespeak the best judgment of everyone who treats genito-urinary diseases, when we say that none such can afford to do without it.

J. HENRY DOWD.

A TEXT-BOOK OF DISEASES OF WOMEN. By CHARLES B. PENROSE, M. D., Ph.D., Professor of Gynecology in the University of Pennsylvania; Surgeon to the Gyneccean Hospital, Philadelphia. Octavo, pp. 531. Illustrated. Third edition, revised. Philadelphia: W. B. Saunders, 925 Walnut Street. Price, cloth, \$3.75 net.

The author of this book has evidently written it, at least in large part, from data based upon practical experience. He begins with a brief chapter on the general causes of women's diseases and passes to methods of examination. In this chapter he gives excellent directions for inspection and palpation—two most important elements in the examination. The bimanual examination is given a value in accordance with its importance and full directions are given for making it. It is to be preceded and followed by an antiseptic douche—a most sensible order. Too often this is neglected. Postures and instruments are described to facilitate the examination, many of which are illustrated.

The author's remarks on diseases of the external genitals are timely and will serve to accentuate the importance of paying due attention to this region.

Diseases of the vagina are considered in a short chapter and then the anatomy and mechanism of the perineum are presented. These should be carefully studied to obtain a clear understanding of injuries to the perineum and the repair of lacerations which are dealt with in the next two chapters. Our author is a strong advocate of the immediate repair of obstetric lacerations, a position that no experienced gynecologist will undertake to challenge. He tells how to correctly repair the lacerated structures and considers effectual and ineffectual operating in text and illustration, both of which are to be commended for their clearness.

The position of the uterus and the mechanism of its support should be studied carefully and thoroughly mastered by every obstetrician as well as gynecologist. These topics are admirably presented in a chapter that is preliminary to the question of prolapse of the uterus, the subject next considered. The operations described and illustrated for the relief of prolapse are all that could be desired, though it is well to remember that now and then a case of this kind appears which defies the surgeon and baffles his skill. Antelexion, retroflexion, and retroversion, naturally follow in the order of kinship and furnish topics for comment in the next chapter. Penrose lays stress upon dysmenorrhea as the prominent symptom caused by antelexion and recommends rapid dilatation with the steel dilator for its relief. He describes the operation well and observes the proper precautions in its conduct, but we are persuaded that he is a little too sanguine of results. It often succeeds but occasionally fails, and this latter fact must not be overlooked when advising it. The use of pessaries and operative means for the relief of retrodisplacement of the uterus are discussed in much detail and with scientific force.

The author takes up laceration of the cervix uteri in his twelfth chapter and handles it with ability. Before

Emmet pointed out this lesion, now more than twenty years ago, it was called ulceration and was treated with caustic applications. Since that time it has been cured by operation. Not every cervical rent causes symptoms, some are repaired by nature; but a goodly number cause distress and may even lead to serious complications, if not malignant growths. Trachelorrhaphy should be made in these cases, and the way to do it is here described and graphically portrayed. The illustrations on p. 157 especially are to be commended for their excellence. Cervical catarrh is next considered and useful directions for its management are given. Congenital erosion and split of the cervix receive brief notices. Cervical polypi are next described, and then cancer of the cervix uteri is discoursed upon. Formerly the Sims operation with curette and caustic was considered adequate in the latter disease, but now it is recognized that complete removal of the uterus affords the only prospect of cure, while the Sims method is reserved as a palliation for those cases not appropriate for hysterectomy. All this is fully set forth in the chapter on the subject.

Diseases of the body of the uterus, such as acute and chronic corporeal endometritis and membranous dysmenorrhea or exfoliative endometritis receive brief consideration, as also do sub- and superinvolution of the uterus. Next come cancer and sarcoma of the uterus and then fibroid tumors are reached. The growing importance of this subject is everywhere indicated in literature, especially in text-books and monographs. It has become possible to save life under such desperate straits through surgical intervention in case of fibroid growths, that interest in the subject is aroused. Their pathology is studied, various operative methods are devised, and the technique is being perfected. Penrose has dealt with the whole question masterfully and has put forth succinctly the practical knowledge that will prove valuable to the reader. One thing is

pretty generally accepted, namely, that fibroids as such do not demand removal, but only when they produce symptoms. A few short chapters treat of hematometra, hydrometra, pyometra, tuberculosis of the uterus, and inversion of the uterus, then we come to two chapters on diseases of the fallopian tubes.

The most common disease of the fallopian tubes is inflammation and its causes are chiefly sepsis and gonorrhea. These ravage the female pelvis and upset woman's economy more than any other two causes combined. It is fortunate that modern surgery affords relief for such destructive processes, otherwise woman's lot would be almost unbearable. A study of Penrose's exposition of the diseases of the fallopian tubes and the operations for their cure will well repay the time appropriated thereto by student or surgeon.

Ectopic pregnancy has been an absorbing subject ever since Mr. Lawson Tait properly explained its pathology. It was the result of his observations at the operating table and has been the working pathology of operators ever since it was published. The chapter devoted to the consideration of this subject in this book is of a practical kind, as might be expected from a practical surgeon. He gives an accurate clinical picture of its symptoms, writes intelligently of its diagnosis, and, coming to treatment, says it is operative. This is as it should be, and it disposes effectively of all the other methods that have been proposed as unworthy of consideration at this period of time and with our present knowledge of the subject. He considers the operation under three heads: (a) Before primary rupture; (b) at the time of rupture; (c) after rupture. They make the subject plain, bringing it easily within the understanding of the student as well as practitioner.

Under the head of diseases of the ovaries two chapters are taken up with descriptive anatomy, hernia of the ovary, prolapse of the ovary, ovaritis, apoplexy of the ovary and ovarian

hydrocele. Then follows a most interesting chapter on cystic tumors of the ovary, which betrays a well-grounded knowledge of pathology, a most important element to teaching understandingly this weighty subject. This and the next chapter on cysts of the parovarium, are well illustrated with clear engravings which help to a clearer comprehension of the text. Time was when to tell a woman she had a tumor was sufficient; now she must be informed as to its precise nature, point of origin, present condition, and whether cure may be expected at the hands of the surgeon. These and other essential facts are discussed in these chapters and in the next two, wherein the natural history and treatment of ovarian cysts and solid tumors of the ovary are delineated with circumspection.

The next chapter we find allotted to malformation of the genital organs, after which the disorders of menstruation are briefly considered; a short chapter, also, is set apart to the menopause. In a well-arranged manner in the next chapter, genital fistulæ are described and treated. These conditions, always so abhorrent, were formerly, even within our own time, incurable; but now, thanks to the technique of modern surgery, even a tyro may operate upon the simplest forms with success, and all are within control by experienced operators. A long chapter, comparatively speaking, is assigned to the consideration of diseases of the urethra and bladder. There has been great advance of late in our knowledge of these diseases and their treatment. Penrose shows his appreciation of the fact in his writing, and we cannot too strongly commend what he says. Gonorrhea in women, which forms the subject of the next chapter, is another disease upon which great light has been thrown in recent years. If a virtuous woman suffers from a pyosalpinx soon after marriage, it is strongly presumptive evidence that the husband has infected her.

On the other hand, not every pyosalpinx is due to gonococci; hence

there must be rare, discriminate judgment exercised in these conditions, else irreparable harm may be done to innocent reputation. Gonorrhea is an insidious disease, often baffling the most skilful in its detection and even lurking in the genital tract of woman for a long time without her knowledge. This chapter is a helpful exposition of the subject and will be read by every gynecologist with absorbing interest.

The last four chapters in the book deal with operative gynecology, the first of these taking up the technique of gynecological operations, the subject being continued in the next following chapter. These two—chapters xxxix. and xl.—constitute one of the best dissertations on this most important topic that we have seen. It is a compact statement, practical and instructive. In the first of these chapters is described the preparation of the operator, his assistants, the nurses, instruments, ligatures, dressings, the operating room and the patient. These are all given in minute detail, yet not an unnecessary word is used, hence the description is not too diffuse or wearisome.

In chapter xli., Penrose discusses the treatment after abdominal section, or as he calls it the after-treatment of celiotomy. The word celiotomy ought to be banished from gynecological literature, for it is a mongrel in derivation and a blunder in meaning. Scholars should not use it because they will be imitated by those who pause not to determine for themselves whether it is right or wrong. The after-treatment, then, of abdominal section is what this chapter deals with and it does it well. The author gives no water for twenty-four hours after section, and then hot water or cold soda-water in small quantities. In this way nausea and vomiting are kept within narrow limits. He also deprecates the use of opium, which is well, for other things being equal, the patient who does not take opium afterward, makes a better convalescence. The other methods of the author in the after management of these patients are such as to meet the

approval of most abdominal surgeons, and may be studied with profit by those to whom such management is intrusted.

A chapter is set apart for the consideration of the special technique of operations upon the uterus and the uterine appendages. It embraces removal of the uterine appendages, ovarian cysts, intraligamentous cysts, and the operation for the removal of the uterus. In the latter he describes the several operations that have been proposed—supravaginal amputation, total extirpation or complete abdominal hysterectomy, vaginal hysterectomy, combined vaginal and abdominal hysterectomy and myomectomy. The descriptions of these operations are clear and the illustrations pertaining to them accentuate the descriptions in a most admirable manner. A brief chapter on the effect of the removal of the uterine appendages, and a well arranged index brings this interesting and valuable treatise to a close.

As we said in the beginning, this is a practical work written by a practical man. It is a safe guide for the inexperienced as well as a good book for the student. Moreover, it can be read with profit by every gynecologist, no matter whether he finds himself in agreement with all its details or not. In this résumé we have endeavored to point out its salient features.

WILLIAM WARREN POTTER.

A TEXT BOOK OF EMBRYOLOGY for students of medicine. By JOHN CLEMENT HEISLER, M.D., Professor of Anatomy in the Medico-Chirurgical College, Philadelphia, Pa. With 190 illustrations, 126 of them in colors. Philadelphia: W. B. Saunders. 1899. Price, \$2 50.

The fact of embryology having acquired in recent years such great interest in connection with the teaching and with the proper comprehension of human anatomy, it is of first importance to the student of medicine that a concise and yet sufficiently full text-book upon the subject should become available. This author as an

observer and teacher has been awake to this demand and has prepared a work sufficient to meet the exigencies of the hour, and the result is a carefully prepared statement of the more important essentials of human embryology. In arranging the subject-matter of the book Heisler has had in mind a plan not only to present a connected story of human development, but also to make each chapter as nearly as possible complete in itself. This plan, so successfully carried out, enhances the value of the work as a book of reference, at the same time making the subject more intelligible and systematized—elements of strength so often lacking in many of our modern text-books.

The book is divided into eighteen chapters, the first very naturally being devoted to the male and female sexual elements, the theories in vogue regarding impregnation, the discoveries of Kölliker, Purkinje, Schwann and others interested in this field of observation. The description and development of the spermatozoa and ova, menstruation and ovulation, are carefully and intelligibly portrayed, and the chapter is brought to a close by a consideration of the relation between menstruation, ovulation and conception. In regard to this mooted question the author says: "While it is now generally accepted that the two functions are not mutually interdependent in the sense that one is a necessary part of the other, yet, since the turgescence incident to sexual intercourse has been shown to hasten the rupture of the follicles, it seems reasonable to suppose that the ovarian hyperemia attendant upon the menstrual epoch would exert a like influence."

The second chapter deals with the segmentation of the ovum and the formation of the blastodermic vesicle. The different kinds of cleavage into holoblastic ova and meroblastic ova are described at length and are illustrated by excellent diagrams and a full-page colored plate. After the stage of segmentation there

follows naturally the description of the germ layers, and the formation of the primitive streak. From these primary germ layers are developed the various tissues and organs of the body by metamorphoses, which are given in detail on page 59 and are very convenient for reference.

In the fourth chapter we find the beginning differentiation of the embryo, or in other words the "embryonic backbone" makes itself manifest very early in life. The neural canal and accompanying chorda dorsalis are described at length, the author referring repeatedly to the evolutionary stages of the lower organisms from the amphioxus up.

In the following chapters the formation of the body wall, and of the fetal membranes, as the amnion, allantois, chorion, the maternal membranes as the decidua reflexa, decidua vera and decidua serotina, the placenta and the umbilical cord are all clearly described and handsomely illustrated. Clearness of portrayal, not only by word but by drawing, seems to be a natural gift of the author, as a perusal of these chapters will convince. The embryo takes on something like shape and form in chapter VII. and the visceral arches and clefts constitute a conspicuous feature of the external appearance of the embryo during this stage. The clefts are present permanently only in fishes in tailed amphibians, while in birds and mammals they are found only in embryonic life. Sometimes they persist in the human forms and are regarded as links in the chain of evolution.

Heisler has divided arbitrarily the period of human gestation into three stages: (1) The stage of the ovum; (2) the stage of the embryo; and (3) the stage of the fetus, the latter including the remainder of the term of intrauterine life. During the last stage the rate of growth is far less rapid than in the preceding stages and the different organs and tissues take form and function very slowly and gradually. The succeeding chapters are devoted to these various tissues, chapter VIII. dealing with the

development of the connective tissues of the body and of the lymphatic system. Regarding the development of blood the author says: "Blood and lymph may be looked upon as forms of connective tissue, in which the intercellular substance is fluid, constituting the plasma, the cellular elements thus remaining free, cells, the blood or the lymph-corpuscles. This theory of blood development is somewhat at variance with the theories of German hematologists of the Ehrlich school. Chapter IX. treats of the development of the face and of the mouth cavity, including the tongue, teeth and palate. In chapter X. the development of the vascular system is described at great length, and the heart especially receives full consideration. Chapter XI. treats of the digestive system, and in the succeeding chapters are considered the respiratory system, the genito-urinary system, the nervous system, skin and appendages, sense organs, muscular system, and the skeleton and limbs.

A very instructive tabulated chronology of development follows, showing the extent thereof at the end of each week up to the tenth, and then of the months following, proving very helpful to those who desire to know the exact development at a certain period. The book, on the whole, is an excellent one and can be recommended as a text-book or work of reference to every one interested in this important branch of science. The illustrations are of a high order of merit. Very artistic are the full-page colored plates, being very elucidating and handsomely executed.

WILLIAM C. KRAUSS.

A MANUAL OF THE PRACTICE OF MEDICINE. By A. A. STEVENS, A.M., M.D., Professor of Pathology in the Woman's Medical College of Pennsylvania; Instructor in Physical Diagnosis in the University of Pennsylvania; Physician to St. George's Hospital, etc., etc. Fifth edition, revised and enlarged. Philadelphia: W. B. Saunders.

Very often when a man writes a really good work on a medical subject, a book perhaps that achieves a great success and is universally looked upon as a safe guide and a good friend, the author begins to think that he, too, is a remarkable success as a sort of latter-day literary marvel. His thoughts turn to his book and he begins figuring how he can make it everlasting as well as great, by putting on gingerbread trimmings; and he goes ahead and adds yard after yard of pathology; yard after yard of prognosis; yard after yard of deep and learned material which he has lassoed from the deepest recesses of libraries of research; and when he has completed his work of literary exploration and disinterment, he bears down on his publishers and a "new edition" is whirled out and a really good and useful book has been spoiled into a literary monstrosity, scarred with the ear-marks of egotism and condemned with prolixity. This being the trend in much of the medical bookmaking of to-day, it is quite a pleasure to get one's fingers between the covers of a really good book, a really helpful and useful volume, such as Stevens' Practice, which has of a truth been "revised and enlarged" without being made a sort of grab-bag with a lot of fancy froth and not much bottom.

Dr. Stevens' original book was simple. His latest edition is still simple. And in its simplicity lies its chief charm and its greatest value. It is helpful. And being prepared "especially for students" it stands to reason that it is also good for the practising physician. There are modifications and additions to this volume as compared with the previous editions, and all are made with a view to maintaining the fundamental idea in the construction of the book—simplicity. The chapters on diseases of the pancreas, diseases of the blood and ductless glands, and the articles on appendicitis, angina pectoris, aphasia, myxedema and syringomyelia have been entirely rewritten. The new articles added treat of cholecystitis, tuberculosis of

the kidney, gastropptosis, enteropptosis, and chronic cerebro-leptomeningitis. Throughout the book is much material on the original lines. The divisions are practically the same, but everything has been brought up to date in treatment, and all is presented in the most assimilable form. Probably few books ever put together for students' use are as widely known as Stevens' Manual, and this is so because there is given in every case a reason for every condition. This is the basis of a true understanding of medicine. With an ever present interrogation point confronting him the student finds questions answered in Stevens'. He has to do quite as much thinking for himself, it is true, but his thinking is made easy and his study of practise a pleasure and not a brain-racking grind—a floundering about in a sea of symptoms, with occasionally a foothold on the shifting sands of treatment and diagnosis. The volume is handsomely bound with flexible covers.

N. W. WILSON.

DISEASES OF THE NOSE AND THROAT.

By J. PRICE BROWN, M.B., L.R.C. P.E., Member of the College of Physicians and Surgeons of Ontario; Laryngologist to the Toronto Western Hospital; Laryngologist to the Protestant Orphans' Home; Fellow of the American Laryngological, Rhinological, and Otological Society; Member of the British Medical Association, the Pan-American Medical Congress, the Canadian Medical Association, the Ontario Medical Association, etc., etc. Illustrated with 159 engravings, including 6 full-page color-plates and 9 color-cuts in the text, many of them original. Pages xvi—470. The F. A. Davis Co., Publishers, 1914-16 Cherry Street, Philadelphia. 1900. Price, \$5.50.

The author in his preface announces that his book has been written to enable the medical man in general practise to care for cases unable to seek treatment at the hands of skilled laryngologists. With so many good

text-books upon laryngology and rhinology in print, there should, indeed, be good reason to add to their number.

A series of monographs upon diseased conditions of the upper air tract whose treatment requires little technical and manipulative skill, would be a distinct addition to the equipment of the family physician. This is particularly so if the theme were confined largely to well considered personal experiences in methods of treatment and perhaps to some original investigations in certain lines. In this work, however, conventional divisions covering all the usual text-book topics have been followed, although this has been done thoroughly and frequently in larger and more detailed text-books.

Why is described to the general practitioner surgical technique that only an expert can follow? Why omit the consideration of asthma and diphtheria and yet describe edematous rhinitis, of which the author has seen but one case, papilloma of the nose, and other rare affections? The typography of the book is good though the illustrative cuts are not well executed. As is but too often the case in medical writing, the style and expression leave much to be desired.

The treatment of deformities of the nasal septum is well described, but it is surprising to find no mention of Asch's classic and successful operation. No mention is made of the use of adrenal solution in nasal operations. In so recent a work this valuable adjunct to nasal surgery should not be neglected. The valuable hemostatic properties of orthoform are not mentioned. Both of these medicaments are distinctly useful to the family physician in meeting, for example, the serious emergencies that occasionally attend severe nose bleed.

In the treatment of nasal polypus no mention is made of the frequent need of thoroughly breaking down and curetting the ethmoid cells to prevent recurrence. This is often the only way in which the disease can be eradicated. The general medication and management of syphilis of the

upper air tract is admittedly of more avail than local treatment, but the author dismisses it with the merest comment. Empyema of the maxillary antrum is well considered, and its treatment quite thoroughly explained. Diseases of the ethmoid and sphenoid sinuses have too brief a consideration for thoroughness. Indeed, for the general physician, they must remain a *terra incognita*.

The author's brief dismissal of frontal sinus disease by referring it to the oculist is singularly unfortunate. It is eminently in the domain of the rhinologist, and its importance as a factor in the causation of obscure "catarrhal" conditions is receiving increased recognition. The "latent" cases would never seek an oculist.

In the consideration of nasopharyngeal catarrh, there is a singular absence of allusion to its frequent association with digestive derangements and blood dyscrasia. Adenoids, that subject of increasing importance to the family physician, receive brief but good consideration. Their almost constant relation to recurring earache is not sufficiently emphasized, and the dangers from chloroform in the adenoid operation are assuredly treated too slightly.

Quinzy is satisfactorily considered, though more explicit details of the therapeutic steps in the management of this trying and obstinate affection would be welcomed assuredly by the general practitioner. No mention is made of the association of edematous or elongated uvula with excessive smoking. This is, perhaps, the one positive throat lesion attributable to smoking. Hoen's description of the morbid anatomy of the degenerated uvula occurring in smokers confirms the clinician's inductions.

The author makes a shrewd clinical observation in regard to the occurrence of lacunar tonsillitis after nasal surgery. However, the implication that it is an unavoidable or necessary sequence is disproved by clinical experience. It is due usually to surgical infection. Where all operations,

whether with cautery or steel, are performed with sterile instruments and with such antiseptic precautions as the nasal chamber permits, a subsequent lacunar tonsillitis is rare. The chapter on pharyngeal mycosis is excellent. This rather rare affection has been the cause of much anxiety to physicians unfamiliar with its character. No allusion is made to the anemia and depression of the general health that are frequently found in these cases.

The work bears the impress of the writer's earnestness and clinical experience and it will be found a safe and conservative guide to those who consult its pages.

FRANK WHITEHILL HINKEL.

LOVE AND ITS AFFINITIES. By GEORGE F. BUTLER, M. D., Professor of *Materia Medica* and Clinical Medicine in the College of Physicians and Surgeons, Medical Department of the University of Illinois. Author of "*Materia Medica, Therapeutics and Pharmacology*," etc. Octavo volume, cloth, gilt top, 134 pages, with photogravure frontispiece, "*Cupids Sharpening Their Arrows*," by Raphael Mengs. Chicago: G. P. Engelhard & Co., publishers.

In his essay on "Experience," Emerson remarks: "The physicians say they are not materialists, but they are. . . . What notions do they attach to love! what to religion! One would not willingly pronounce these words in their hearing and give them the occasion to profane them." Most physicians in their thinking, many in their spoken and printed words, have disproved Emerson's assertion, and although Dr. Butler has set himself the difficult task of discussing love and its affinities, lust and religion, he has done so with delicacy of thought and beauty of expression and in a manner which acquits him of any charge of materialism.

To the thoughtful man or woman accustomed to studying the motives of mankind, the association of love,

lust and religion is not startling. In the last analysis motive resolves itself into one or the other of the fundamental impulses, self-preservation, or the preservation of the species; and while at first it seems a far cry from the baseness of the depraved sexual instinct to the sublime heights of religion, the relation between the two is not so distant. Both have their origin in the same passion.

Phallicism, the almost universal sex-worship of primitive peoples, shows the alliance between religion and the sexual instinct, an alliance seen, but scarcely ever appreciated, in the greater religious receptivity in early life when the sexual powers are maturing.

Permit the reviewer to suggest for the greater religious devotion of women a reason which seems not to have occurred to the author. Love, the gratification of the sexual instinct, demands of woman—has demanded of the brute mother—for long ages before man appeared on the globe—self-sacrifice. For woman self-sacrifice is a corollary of love. Does she not turn to the church because the self-abnegation, which all religion enjoins, affords an outlet to the altruistic instinct denied its natural expression in motherhood?

Of those whose work does or should acquaint them with the elemental passions of mankind, the physician, who sees too often the grosser side of the sexual instinct, needs to have shown him, as Dr. Butler has done, the reverse of the picture, which deals with love in its higher forms. Too prone is he to regard the base and animal as the only manifestations of the all-pervading and all-compelling passion. On the other hand, there are those by whom far more knowledge of this fundamental impulse and its affinities might well be possessed—the professional teacher and the preacher. The one has the guiding of the young through the critical periods of youth and early manhood, maidenhood and young womanhood; the other, engaged with the ideals of life, is not infre-

quently unacquainted with the real man and the instincts and passions which make him what he is. Let the physician read that he may not wholly lose faith in human nature; the priest and teacher, that they may understand more thoroughly how closely allied in man are the worst and the best.

M. F.

INJURIES TO THE EYE IN THEIR MEDICO-LEGAL ASPECT. By S. BAUDRY, M.D., Professor in the Faculty of Medicine, University of Lille, France, etc. Translated from the original by Alfred James Ostheimer, Jr., M.D., of Philadelphia, Pa. Revised and edited by Charles A. Oliver, A.M., M.D., Attending Surgeon to the Wills Eye Hospital; Ophthalmic Surgeon to the Philadelphia Hospital; Member of the American and French Ophthalmological Societies, etc. With an adaptation of the Medico-Legal Chapter to the Courts of the United States of America, by Charles Sinkler, Esq., Member of the Philadelphia Bar. 5½ x 7¾ inches. Pages, x-161. The F. A. Davis Co., Publishers, 1914-16 Cherry St., Philadelphia, Pa. Price, extra cloth, \$1.00, net.

So far as we know, this is the first presentation to the English-speaking public of a medico-legal treatise on injuries of the eye. It is true that it is a translation, and yet it is more than a translation, inasmuch as its editor has engrafted upon it additions which bring it into accord with the jurisprudence of our own country.

The distinguished author, who is already well known by his writings, and especially by his learned contribution to Norris and Oliver's "System of Diseases of the Eye," on "Simulated Blindness," has here given a succinct account of the various injuries of the eye and its adnexa, their symptoms, their course and prognosis, and the differentiation between the impairment or loss of vision due to injury and that due to congenital anomalies or acquired lesions, more or less seri-

ous, antedating the injury, and perhaps unknown to the patient. He also seeks to differentiate between the different degrees of impairment of vision and to determine whether or not the patient is exaggerating or simulating. The ground is well covered, and M. Baudry has succeeded in compressing within the limits of this small volume a vast amount of information and many valuable suggestions, and no one can avail themselves of these without being profited. While thus laying before the reader the outcome of his study and large experience in injuries of the numerous structures of the eye, the author, in addition, very properly emphasizes that the legal expert should not only familiarize himself with these, but that he should have a profound knowledge of both the internal and external diseases of the visual apparatus, and understand their medical significance. The special purpose of the book, as stated by the author himself, is "to guide the expert, and to make it easier to estimate accurately the damage caused by the injury to the individual."

To American readers the concluding chapter, by Charles Sinkler, Esq., of the Philadelphia bar, on "medico-legal expert testimony," is of special interest. In it he deals briefly with "expert evidence in general," "medico-legal experts," "a few cases in which expert testimony relating to the eye has been offered," "procedure in the examination of experts," "expert testimony in cases of malpractice," and "proposed legislation on the subject." Mr. Sinkler recognizes that expert testimony is "peculiarly liable to abuse and misuse," and that the witness, however honest, may be biased, unconsciously, toward the party who retains him. He evidently feels the need of a reform in the present practice, and endorses the following proposed measures, suggested by an eminent jurist of Philadelphia:

"1. The formation of a stricter definition of expert capacity.

"2. The reasonable limitation of the number of experts to be summoned in any case.

"3. The designation of experts by the court upon nomination by the parties.

"4. The abolition of the hypothetical question.

"5. The summoning by the trial-judge of an expert of his own choice to serve as an assessor or as a witness to review the expert testimony already in, or as both.

"6. The payment of expert witnesses out of the public treasury, or, at least, in the first instance."

The combined labors of the author, translator, and editor have yielded a most readable and instructive guide to the study of medical jurisprudence in relation to ocular injuries.

ALVIN A. HUBBELL.

A POCKET MEDICAL DICTIONARY giving the pronunciation and definition of the principal words used in medicine and the collateral sciences, including tables of clinical eponymic terms of the arteries, muscles, nerves, bacteria, bacilli, micrococci, spirilla, and thermometric scales; and a dose-list of drugs in English and metric systems of weights and measures. By GEORGE M. GOULD, A.M., M.D. Fourth edition, revised and enlarged. Philadelphia: P. Blakiston's Son & Company, 1900. Price, \$1.00.

When the first edition of this book was sent out it met with popular favor, and this reception has been accorded to each subsequent edition. A pocket medical lexicon is needed by every medical student, and is convenient for many physicians; the latter often find it important to have a small work of the kind at hand in places where the large dictionaries would be out of place or impossibilities. Hence, there need be set forth no lengthy argument to convince an experienced observer of the fact that such a book has a place. Were that essential, the prompt exhaustion of three editions in a few years might be pointed out as

substantial evidence, conclusive on the point in question. It must be remembered, too, that dictionaries are not like popular novels, that require new issues every month or two to meet the hungry demand of the novel-reading public.

The vast amount of material in this book makes it a wonder. There are 837 pages in which are defined over 30,000 words. Besides, there are tables that give no end of information upon points of great importance. Again, there is unusual accuracy of spelling and definition, which are of supreme concern to students. It is essential at the present time that medical English shall be correctly written and spoken; it sounds harsh to the refined ear to hear such common words as abdomen, enema, and umbilicus mispronounced as they are so frequently, even by teachers of medicine.

The clear type, good, strong paper, and flexible black leather binding, make the book not only practical but attractive; the price, too, is a feature of importance in its favor. Taken altogether it is one of the best of the pocket medical lexicons on the market.

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THE ANATOMY OF THE BRAIN. A Text-book for Medical Students. By RICHARD H. WHITEHEAD, M.D., Professor of Anatomy in the University of North Carolina. Illustrated with Forty-one Engravings. Pages, v—96. The F. A. Davis Co., Publishers, 1914—16 Cherry St., Philadelphia, Pa. Price, extra vellum cloth, \$1.00, net.

The author does not claim that this little book shall take the place of the recognized standard works on the brain and nervous system, but it is his aim to furnish medical students with a clear, accurate and concise account of the anatomy of the brain, to be used as a guide in the study of this most important organ. It is not to be expected that in a work of 96 pages the subject of brain anatomy could be treated without leaving out much of the minor details, the points over

which controversy still exists, and the minute anatomy or histology, and the author wisely draws attention to these omissions in the preface.

The first chapter treats of the division of the brain into the five parts: Myelencephalon, metencephalon, mesencephalon, diencephalon and telencephalon, the last three divisions forming the cerebrum. The second chapter deals with the surface anatomy of the encephalon, comprising a general consideration of the basal ganglia, the ventricles, the convolutions and fissures. The descriptions of these various intricate parts of the brain are carefully made, but could be made much clearer by means of the terminology advocated by Professor Burt G. Wilder, of Cornell University. For instance, on page 25, regarding the fissure of Rolando, one reads: "It proceeds *forward* and *ventralward*;" and in another place one reads, concerning the fissure of Sylvius, that it runs "*dorsalward* and *backward*." Why not say, in the former case, "cephalad and ventrad," and in the latter instance, "dorsad and caudad?" Then no mistake could possibly be made regarding the meaning conveyed. The third chapter is devoted to the internal anatomy of the encephalon, beginning at the first cervical segment of the cord and continuing cephalad through the hemispheres. The course of the various paths are clearly depicted, the nuclei of the cranial nerves and the isolated cells well portrayed. The illustrations in this chapter are evidently original and well executed, particularly those on pages 35, 37, 41 and 55. The last chapter deals with the association fibres or the conducting paths of the encephalon. The author traces the principal and secondary motor paths, the sensory, acoustic, optic and olfactory paths as correctly as can be done with the present state of our knowledge concerning the conduction paths.

On the whole, the book gives promise of becoming an excellent treatise with succeeding editions, and the hope is expressed that the author may be-

come imbued with the prevalent idea of expansion and take up some of the minor and controversial points, and develop them into a treatise sufficiently advanced for the general practitioner and specialist.

WILLIAM C. KRAUSS.

ESSENTIALS OF PHYSICAL DIAGNOSIS OF THE THORAX. By ARTHUR M. CORWIN, A.M., M.D., Instructor of Physical Diagnosis in Rush Medical College; Attending Physician to the Central Free Dispensary, Department of Rhinology, Laryngology, and Diseases of the Chest. Third edition, revised and enlarged. Philadelphia: W. B. Saunders, 935 Walnut St. 1899.

From a small outline of physical diagnosis of the chest written especially for the immediate wants of the author's classes in the Rush Medical College, has grown the present little volume, which aims to present in systematic form the gist of the science of physical diagnosis as applied to the thorax. While the intention has been to confine the subject to the thorax, reference has been made to some of the abdominal organs, and to various phenomena of the circulatory system outside of the chest, where these have seemed to be specially related to the chest cavity and its organs. In this form the salient points of the subject may be more readily grasped by those who are all too busy to seek them out of extensive treatises and to arrange them for proper assimilation.

The author divides the work into four divisions: (1) topography of the chest; (2) landmarks of the chest; (3) methods of physical diagnosis; (4) physical signs common in and peculiar to each disease of the chest. The author goes over the subject with great care and minuteness, placing the salient points in bold-faced type, which appeal to the eye at once. The normal sounds are carefully described at first, then the abnormal sounds, with their peculiarities and their causes. The abnormalities of the heart and great vessels, especially congenital

anomalies, tumors, and aneurisms are systematized in the same general way.

Numerous illustrations accompany the description which elucidate the text, already simplified in a most admirable manner. The little book is to be cordially recommended for reference and its perusal will certainly be advantageous to any one, be he student, professor or simply general practitioner.

The publisher has made this an attractive little volume.

WILLIAM C. KRAUSS.

A CYCLOPEDIA OF PRACTICAL MEDICINE AND SURGERY. A Concise Reference Book, alphabetically arranged, of Medicine, Surgery, Obstetrics, Materia Medica, Therapeutics and the various specialties, with particular reference to diagnosis and treatment. Compiled under the editorial supervision of GEORGE M. GOULD, M.D., and WALTER L. PYLE, M.D. Philadelphia: P. Blakiston's Son & Co. 1900.

The additions to the literature of the year have been further supplemented by this comprehensive work. It is the most voluminous digest that has yet appeared and must have been a great labor for the editors and contributors.

In the preface it is stated that "a striking criticism of many large col-

laborative books is that as each contributor is held personally responsible for his work, he must necessarily be allowed to preserve his distinct and separate individuality, not infrequently dissenting from teachings elsewhere in the same volume; the reader is thus left bewildered by a mass of heterogeneous and undigested material. To avoid this and other disadvantages, and to secure the desired homogeneity in this cyclopedia, we have asked permission of our contributors to merge their work anonymously in proper subordination and under the free control of the editors."

This is in direct contrast to methods that have been adopted in some other instances in the preparation of digests of medical literature. Experience will determine the value of each. The book before us is full of interest, and it has been prepared with great care. It covers an enormous field and it is surprising that the work has been so well done. It will be found a helpful book to a busy man who must needs get a hint and get it quickly, and it will be useful to a medical author or writer who wishes for data and cannot waste much time in obtaining them.

The book, withal, is beautifully printed in clear-faced type on strong well-finished paper, contains numerous excellent illustrations, and is substantially bound in leather. It is an ornament to the library and a useful volume to find upon its shelves.





EDWARD J. ILL, M. D.

Newark, N. J.

THE EDITOR'S DESK

MEDICAL EDUCATION IN THE UNITED STATES.

There is no more absorbing question that can engage the attention of the medical profession than that pertaining to the education of its members. The details relating to it are often discussed in the medical magazines and in medical societies, frequently in a perfunctory way, occasionally in a grandiose manner, and generally without a definiteness that leads to results, either in improving the existing methods, or bettering the temper of the disputants.

It is frequently stated that too much has been said and done already, that there has been too much legislation on the subject and that medical laws are unnecessary. The men who write or talk in this manner are generally loudest in their shouts for the "Code of Ethics," and often the quickest to violate the wholesome teachings it seeks to inculcate, though often fails to enforce.

An admirable and elaborate volume upon professional education in the United States has recently been issued by the University of the State of New York. It is prepared under the direction of James Russell Parsons, Jr., the secretary of the university, but the chief work in its preparation is credited to Mr. Henry L. Taylor, Ph.D. It is that part of professional education relating to medicine with which we have to do at this time, which is set forth in Bulletin No. 8, January, 1900, which is a book of standard octavo size, containing 395 pages.

This valuable contribution to the history of medical education gives the record in detail from the apprentice system of the 17th and 18th centuries to the present methods of State control. It shows the influence that medical societies have exerted in the evolution of medical education and especially in promoting the higher standards. The New York system is set forth and its influence made apparent, yet there is a complete account of all the work done in the several States, including their present requirements and methods of granting license to practise.

We learn from this brochure that the ratio of physicians to the population is about 1 to 600 in the United States, while it varies in for-

eign countries from 1 to 1,100 in the British Isles to 1 to 8,500 in Russia. These figures are of course only approximately correct, but are as nearly accurate as changing quantities permit. There are 19 endowed schools of medicine with endowments amounting to \$1,906,072. The property of medical schools has greatly increased of late, notwithstanding advanced requirements, a condition especially notable in the State of New York.

Any candid observer who may examine this interesting volume cannot fail to be impressed with the satisfactory progress that has been made of late, and is still making, toward a standard of medical education that will soon make the United States in this respect the peer of any country in the world. It is quite true that much remains to be done to accomplish this desirable end, but at the present rate of progress it will not be long before an American license to practise medicine will be recognized by the leading governments of Europe, if not also in the far East, toward which the flag of the republic is making its way.

COMMISSIONING CONTRACT SURGEONS

In the first issue of the AMERICAN MEDICAL QUARTERLY there appeared an editorial advocating the issuing of commissions to the acting assistant surgeons whom Surgeon General Sternberg was compelled to employ under contract by reason of the insufficiency of the numerical strength of the medical department of the Army. Attention was called to the fact that these contract surgeons were given no rights at all by the contract under which they worked, and that they were rather looked down upon in some quarters as necessary evils. It was said, too, that a bill would be introduced in Congress remedying this very apparent injustice.

Such a bill is now in course of passage and as it has the support of the Surgeon General, who from the very outset has gone out of his way to make secure the official position of acting assistant surgeons, and the Secretary of War, it is more than likely that it will become a law before very long. The bill was introduced in the Senate by Mr. Foraker, and is sweeping in its provisions.

It provides that all acting assistant surgeons who have been appointed since May 1, 1898, shall have issued commissions to them as first lieutenants and assistant surgeons, U. S. V., the commissions to be dated the day the contract was annulled, provided they served less than a year. If the surgeon has served a year then his commission is dated at the end of the year, and continues in force, until such time as the surgeon is honorably discharged. After serving two years the surgeon is commissioned a captain.

The bill, after making the official standing of contract surgeons secure beyond question, and placing them upon such a firm basis as to make them available for all duty performed by regularly commissioned officers, such as court martial, further provides for the payment of all mileage, which has been denied surgeons under contract, and it gives them commutation of quarters. This is merely justice. The most important sections of the bill, however, are those authorizing the commissioning of these men, and the giving to them of all the rights and privileges of Army officers. To this they are entitled by virtue of their work. They have worn the uniform of the United States Army and have performed all the duties usually performed by Army officers. Many of their acts have as a consequence been, technically speaking, illegal in that they performed official duties without being commissioned. The Foraker bill by providing for these commissions legalizes every act performed by an acting assistant surgeon since the beginning of the war.

The Association of Acting Assistant Surgeons of the Spanish American War is working hard for the passage of the Act, and there seems to be little doubt that it will go through, as it should.

THE ABOLITION OF THE ARMY CANTEEN.

One of the most misguided bills which has been introduced into Congress this session is that abolishing the Army canteen, and it is pretty generally condemned by Army officers and surgeons. The idea of abolishing the Army canteen as an aid to compulsory teetotalism is a mistaken one. The canteen is in reality the enlisted man's club. Here he may buy beer and liquors, lunch, cigars and smoking tobacco, and numerous other things necessary to a soldier's life at an Army post. Everything sold at the canteen is purchased under the supervision of an officer, and so it is likewise sold. Purchases are made by check, and thus an accurate account is kept of what each man gets. Thus, the quantity

is known. As to the quality, that is known too, as the best. From a purely temperance view point the canteen is a safeguard. If it is abolished the men will get liquor outside their posts, and get any quantity of a very uncertain quality too, in some one of the many saloons which spring up in the immediate vicinity of a post. Naturally, there is considerable profit from the conduct of a canteen at a fairly well-conducted post, and this is equally divided between the companies and the hospital corps.

Army surgeons of wide experience in writing on this subject are almost unanimous in saying that there is less sickness at a post where a canteen is operated than where there is none, and that drunkenness is much more common among the men in the latter case.

In this connection, a letter written to the *New York Sun* by an Army officer will be interesting. In part he says:

The advocates of this measure seem to assume that their ideal fits an actual state of affairs that does not exist. The fact that nine men out of every ten drink lager beer and will have it, or some substitute in lieu of it, is the controlling factor in the question, and it is impossible to legislate this desire from their physical make-up.

The question then comes down to a choice as to whether it is better to allow the soldier a limited quantity of good lager, dispensed and consumed under military restrictions, or to drive him to the dives which surround the approaches to every military post, there to get vile liquor and to be exposed to the many evil influences that thrive in such places.

The writer lived the first eighteen years of his life in "prohibition" Portland, Me.; for the past ten years he has served at various posts from New York to San Francisco, and from the Columbia River to the Gulf of Mexico, and can say from that experience that he has never seen a more drunken city in the United States than "prohibition" Portland. The chief result of prohibition is to drive beer out and the vilest of vile whisky in. This will be the result to the Army if this pernicious bill becomes law.

After the Spanish war the writer was stationed at Washington Barracks, D. C., where temporarily there was no canteen. During that winter the guard house was full to overflowing as the result of indulgence in $4\frac{1}{2}$ Street whisky.

The decrease of drunkenness in the Army, and the improvement in discipline, temperance and decency during the past ten years has been very marked, and is due entirely to the good influence of the Post Exchange.

The Post Exchange is an enlisted man's club and comprises, besides the bar, a lunch room, billiard room, reading room and store. The patronage of these, at this post, is about three-fifths of that of the bar, and the soldier receives the benefit of low prices impossible except for the sale of beer.

Furthermore, the profits of the Exchange are

lived monthly among the messes of the men and greatly improve the fare of the soldier. Withdraw this help and put the soldier on the ration, *i. e.*, "Government straight," and disaffection, desertion and drunkenness will result.

INTERSTATE LICENSE RECIPROCITY.

Of late there has been much discussion in journals and societies regarding the importance of exchange of license courtesies between the several States. It is considered by many a great hardship to require an examination of a licentiate who elects to change his residence from one State to another. Looked at from a single viewpoint this would seem to be true.

In the first place, it is well to consider that it is but very few years since any considerable number of States have established control over the practice of medicine. Before State examinations were required there was practically no barrier to the entrance to medical practice. Two years of nominal study were required, but there were no preliminary requirements, and a diploma constituted a sufficient license. Now the States are beginning to adopt the high-school certificate as the minimum preliminary requirement, four years of collegiate training is rapidly becoming the standard, and a separate examination by a Board of Medical Examiners, duly appointed by the State, has been adopted by many States, and very soon will be required by all.

Before this system can be completed, or brought to an approximate state of perfection, there is yet much to be done in improving the statutes of the several States, in order to make them conform in their essential features. Then

the medical colleges must establish a uniform standard of time and method, and the examining boards must, likewise, adopt a similarity of rules of procedure. When all this has been done it will not be difficult to arrange an interchange of licenses between the States in all proper cases.

It is, however, quite out of place to expect that such reciprocity can be established at present, while the methods of education are so different and while the preliminary requirements are so variable. It would be a manifest injustice for a State that now demands a fixed and definite standard with reference to the granting of State license to practise, of those educated within the State, to admit to the same privileges those educated in another State where the standards are lower. No State could be found willing to inflict such a penalty upon its own citizenship.

The fact will be apparent to every careful observer that reciprocity is the final stage of this great reform, and is not to be seriously considered until all the conditions precedent thereto are fulfilled. It is the topmost part of the structure and not to be added until the intervening work is sufficiently perfected to receive, with propriety and justice, this important finishing stroke.

The National Confederation of State Examining and Licensing Boards discussed this subject *in extenso* during its recent annual meeting at Atlantic City, at which Dr. E. Amberg of Detroit read a paper relating to it. The trend of the discourse was in the direction we have outlined in the foregoing remarks and which is practically epitomized in this article. We believe this to be the consensus of opinion among those best informed in regard thereto.



SPECIAL THERAPEUTICS.

DIETARY OF THE SICK.

BY DR. I. O. NELLIS, OF HERKIMER, N. Y.

IN selecting a dietary for the sick and convalescent the physician is often compelled to resort to the use of artificial food preparations. Owing to the large number of products of this kind in the market, he is frequently in a quandary as to what food is best adapted to tide the patient over his illness. In all diseases attended with tissue waste the indication is for a nutritious albuminous dietary. In many of these instances the digestive organs are unequal to the task of disposing of the ordinary albuminous foods, such as meats, milk, or eggs, and it is necessary then to have recourse to one of the artificial meat preparations.

Some years ago the view prevailed that peptones represented the most assimilable form in which albumins could be administered, but this opinion has been steadily losing ground. In the light of modern physiological researches it seems probable that only a modicum of the albumins ingested is converted into peptones, the greater part undergoing conversion into albumoses, in which state they are absorbed by the stomach and intestinal walls. Moreover, artificial peptones have a tendency to upset the digestive organs, causing nausea and even vomiting on account of their disagreeable taste; while the albumoses, on the other hand, are entirely free from these unpleasant qualities. It must also be remembered that the ingested albuminous elements, whether absorbed in the form of peptones or albumoses, must undergo reconversion into native

albumin again before being utilized by the tissues; and since the albumoses approximate in composition more closely to albumin than the peptones, it can be readily conceived that this conversion will be accomplished more easily and completely in the case of the former than that of the latter. Leaving aside these theoretical considerations, however, I have come to the conclusion from a clinical standpoint that a special preparation of the albumoses known as somatose, which was introduced some years ago, is the best food we have at our command, in that it is concentrated, easily assimilated and very nutritious, besides it is palatable. All of these qualifications are very essential when we are administering nourishment to the sick.

During a recent epidemic of diphtheria I relied almost entirely upon somatose as an article of diet, and in no instance has it failed to be retained by the stomach or has been objected to by any patient, old or young. On the contrary, all looked forward with pleasure to the time when the food was to be given to them. After the trial of other food preparations I am able to state that none of them gave the entire satisfaction that somatose did, the success of which, in my opinion, is attributable in a great measure to its being so largely composed of albumoses, so essential for the nutrition of the sick and convalescent.

In all cases of typhoid fever I employ somatose dissolved in cold water, in which it was always acceptable, being odorless when so prepared. During the months of October and November, 1897, I treated seven cases of typhoid fever, all which took somatose as the main article of diet, and with no disturbances of the stomach.

Below I have cited a few histories of cases which will serve to illustrate the action of this preparation in various conditions:

CASE I. Gastro-enteritis with extreme malnutrition in a child four years of age. This case came under my care after having been treated by two other physicians for some time without any benefit, although they had prescribed most of the foods in the market. When I first saw the child it was so emaciated that the mother was obliged to hold it constantly during the entire 24 hours. Attacks of vomiting occurred every hour, and the bowels moved about 15 to 20 times daily. This case was of great interest to me. I prescribed appropriate remedies to control the vomiting and diarrhea, which acted so well that in the course of 48 hours the vomiting had been reduced to 6 to 8 times in 24 hours, and the passages to about the same number. We then turned our attention to alimentation. It was here that somatose proved our salvation. It was administered first in 15 grain doses every four hours for the first day, then increased to 20 grains on the second day, and continued in this dose for one week. Under its use the vomiting ceased and the stools became quite regular and more consistent. At the end of the first week after commencing its use, we began to give milk to which somatose had been added, and continued this diet until the complete recovery of the child, which occurred about two months from the time of my first visit.

CASE II. A child six months old, bottle fed, with capillary bronchitis. This patient had been previously treated by a physician who diagnosed phthisis pulmonalis, with entire destruction of one lung. I found the child greatly emaciated; the skin blue and pinched, with entire loss of appetite. In fact, the child seemed to be suffering from inanition, and had been for one month prior to my first visit. In connection with my first prescription, somatose was ordered in ten grain doses, every four hours, and continued for

three days. Under the use of appropriate remedies the bronchitis subsided at the end of this time. We then devoted our whole attention to the inanition. Somatose was continued with milk, adding 15 grains to each bottle (4 ounces) of milk. At first the baby would take only one-half bottleful, but in a week its appetite returned, and in two months it was rosy-cheeked, plump and entirely well. At the time of this writing the child is healthy and robust, with normal lungs. I am inclined to attribute the recovery from malnutrition in this case entirely to the use of somatose.

CASE III. The patient was a boy, eight years old, suffering with diphtheria, who refused all manner of food until finally we hit upon somatose, which completely solved the problem. We gave the preparation in water, 15 grains, every four hours. I may state that during the whole sickness somatose was the main article of diet, except a small amount of milk.

Since using it in this case I have prescribed it in every instance of diphtheria which I have had occasion to attend, and without a single objection from any patient. I might go on indefinitely reporting case after case, but this seems to be entirely unnecessary, as somatose once used, used forever. I may add that in convalescence from any disease whatsoever somatose is a nutrient par excellence, while as a galactagogue it has no equal.

MERCUROL IN THE TREATMENT OF GONORRHEA.

At a meeting of the Genito-Urinary Section of the New York Academy of Medicine, held on the 21st of March, Dr. Ferd. C. Valentine reported a case of acute gonorrhea treated by mercurol irrigations. The patient was an American, aged 32, married, the secretary of a corporation; and was unusually anxious to get well with as little loss of time as possible. He had had several previous gonorrheas, resulting in stricture. On January 21 last, while inebriated, he had coitus

extra domum. Three days afterwards he found a free yellowish discharge, with the usual pain on urination. He at once put himself under treatment, and for ten days was irrigated regularly with mercuriol, for a part of the time twice a day. Discharge was reduced from a free yellow flow to a slight pin-head drop by the first irrigation of mercuriol, 5 per cent, and the urine became clear. Microscopic examination of a specimen of the discharge, which was taken on the first day, showed numerous gonococci characteristically grouped in pus cells. Two days later, after the fifth irrigation, the gonococci were found to have disappeared. A burning sensation was experienced after the irrigations, but the strength of the solutions being reduced, the pain gradually became less, and ultimately ceased. While he did not present the case as absolute proof of the applicability of mercuriol as a gonococcicide, he thought the results obtained were sufficiently satisfactory to warrant further tests. The preparation, he added, was a new one prepared by Dr. Karl Schwickerath of Detroit.

Dr. Ramon Guiteras said mercuriol was being used at the New York Post-Graduate Hospital. The treatment was less drastic than that described by the reader of the paper, the custom at the institution referred to being to commence with small dosages and gradually increase their strength, especially when new preparations were being experimented with. In the case of mercuriol they had commenced with as mild a solution as one-half per cent. and finding favorable though rather slow results, they had gradually increased it, until now a solution of two per cent. was given to all patients who presented themselves at a clinic devoted exclusively to this mode of treatment, of which Dr. Otis K. Newell has special charge. He (Dr. Guiteras) was not sanguine about the discovery of a germicide which would cure gonorrhea in the brief time their unprofessional brethren with their remedies claimed to be able to do, but on

the other hand he did not wish to be regarded as a pessimist, and if mercuriol proved to be as much of an improvement on protargol and argonin as they had done on permanganate and nitrate of silver, it proved at all events that they were progressing along the correct lines.

Further reports of experiments in progress with mercuriol are to be given at future meetings.

A NEW TREATMENT FOR MASTITIS AND OTHER GLANDULAR INFLAMMATIONS.

BY W. ANDREWS, M.D., NEW YORK.

The reduction of inflammation and relief from pain, in all glandular inflammations, sometimes can be brought about much more quickly by a hot dressing of antithermoline than by other methods. In mastitis, for instance, the results are so positive and the relief from pain so prompt that the patient will give thanks for the soothing application. The following report of such a case is evidence on this point :

"In a case of mastitis the result was more than surprising. The patient had been treating herself with ice-bags, hot fomentations, etc. I found her with pulse 110, breast hot, swollen, red in streaks, and very painful. Antithermoline was applied over the whole gland, according to directions, and allowed to remain twenty hours. The pain subsided within two hours, and when I removed the dressing all signs of inflammation had disappeared; swelling subsided; no pain or tenderness on pressure; pulse 80; the patient remarking: 'I am well; wish I had known of that poultice before.' I am satisfied it did the business, and shall adopt the same treatment when occasion presents itself."

In mumps, warm applications of antithermoline made to the glands in front and under the ear, generally speaking, will reduce the inflammation quickly, and the pain in swallowing, which is such an annoying symptom, will rapidly subside. In short, the antithermoline treatment usually is all that is required in this disease.

The adenitis which occurs in almost all cases of scarlet fever, and which is a grave complication in some cases, can be markedly reduced and suppura-

tion in most cases prevented by the early application of antithermoline.

In orchitis and epididymitis very prompt relief of pain and reduction of swelling follow hot applications of antithermoline. A physician reports that a patient who had been confined to the house for several days with a severe orchitis appealed to him to do something for him so he could get down town next day on important business. Whereupon antithermoline was prescribed. It relieved him so quickly that the man expressed surprise that it had not been applied before.

Another physician reports: "A number of cases of orchitis have all yielded readily in from six to thirty hours to the soothing influence of antithermoline."

HEMORRHOIDS.

Prompt relief follows applications of antithermoline to hemorrhoids in those cases that can be reached by local treatment. Wash parts with cold water and soap, and apply a generous dressing of antithermoline, retain in place with a bandage, the ends of which can be fastened to another bandage around the waist. In severe cases apply antithermoline, 1 oz.; powdered alum, 10 grs.; atropia sulph., 1 gr.; mix thoroughly.

CHRONIC ULCER OF LEG.

Antithermoline by many physicians is considered almost a specific for this troublesome and tedious condition. It removes the gray, tenacious dead cellular tissue and starts healthy granula-

tions in twenty-four to forty-eight hours.

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FEMALE NEUROSES—NON-DESCRIPTIVE.

There is scarcely a writer of prominence to-day who does not lay much stress upon the importance of early prolonged treatment of the primary manifestations of an almost infinite variety of nervous affections with the view of preventing the constant development of still graver troubles as well as to relieve present suffering.

In the treatment of *Female Neuroses*, a combination of *Dioiburnia* and *Neurosine* (equal parts) administered in dessertspoonful doses every three hours will prove most efficient.

Non-Descriptive.

Physicians frequently have cases of the Non-Descriptive character. The patients feel that their entire system is out of order, having forebodings, aches and a general feeling of lassitude and debility. The physician recognizes something must be done to satisfy the patient until the trouble is located. In such cases *Dioiburnia* combined with *Neurosine* will usually after a week or ten days give entire relief.

R *Neurosine* 3 ij
 Dioiburnia 3 iv

M. Sig. Tablespoonful in wineglassful of water every three hours.



THE publishers of The American Medical Quarterly, in closing the first volume, desire to return thanks to their many subscribers and advertisers for the patronage and encouragement extended to them during the first year of The Quarterly, and take great pleasure in announcing that with the beginning of the second volume, on August 1st, the title will be changed to "The American Medical Magazine," and will be published monthly, the subscription price, \$2.00 a year, remaining unchanged.

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It should be on the table of every physician.

THE AMERICAN MEDICAL QUARTERLY

A MAGAZINE OF THE
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CONTENTS

Disease of the Sigmoid Flexure,	1107
By JOSEPH M. MATHEWS, M. D., LL. D.	
Some Facts Concerning the Treatment and Medical Complications of Typhoid Fever,	1119
By HOBART ABBRY HARR, M. D.	
Experiences in Intestinal Surgery,	1125
By MATTHEW H. TAYLOR, M. D.	
Sex and Fecundity,	1131
By CHARLES A. E. JOHNS, M. D.	
On the Close Relationship Between the Heart and Cerebral Cortex in a Group of Brain Diseases,	1141
By WILLIAM C. KENNEDY, M. D.	
Typhoid of the Spleen and Gallbladder,	1147
By LAMONT LATT, M. D., LL. D.	
Hypertrophy and Pressure,	1154
By EDWARD WILSON, M. D., LL. D.	
The Effects of Various South-Arm Exercises,	1159
By CHARLES O. BACCHINI, M. D., LL. D.	
The Examination of Blood Specimens by Indirect-Current Coagulation,	1165
By JOHN A. BELL, M. D.	
A Case of Myelitis of the Spinal Cord,	1171
By STEPHEN HENRY WALKER, M. D.	
Transplantation of the Urinary Tract,	1179
By ALBERT VANDER VORST, M. D., and WILLIAM E. MATHIAS, M. D.	
Notes and News,	1185
The Editors' Note,	1186

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As a prophylactic in preventative medicine it is without a peer, and may be used lavishly or sparingly, according to indications, without a suspicion of harm resulting from its use in any application.

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Sample free on receipt of 15 cents to prepay express charges. Monograph, containing full instructions for use, on application.

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INDICATIONS.—In Gout, Neuralgia, Rheumatoid Arthritis, Sciatica and all Rheumatoid or Gouty Affections.

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contains the nutritive elements of beef, egg albumen and the gluten of wheat.

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has the important advantage over all other nutritives in containing the nucleic principles of the glands of the brain and both the nucleic and digestive principles of the salivary glands, stomach, pancreas, Brunner's and Lieberkuhn's glands and spleen.

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is well relished, partially predigested, tolerated perfectly by the most irritable stomach, and indicated in the treatment of all stomach disorders. It is not only a tonic and restorative, but stimulates the appetite for other foods.

Put up in 10 and 16 oz. and 5 pint bottles.



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An Historic Pharmacy of the Eighteenth Century

Now a World-Renowned Manufacturing Establishment.

THE history of the London house of Allen & Hanburys, Ltd., manufacturing pharmacists, reflects to a great extent the history of the development of English pharmacy, from early in the eighteenth century to the present time. The founders and successive owners of this business have been prominently identified with every effort for



WILLIAM ALLEN.

the advancement of pharmacy, and one of them, William Allen, the original of that name in the firm, and its head for nearly fifty years, was an earnest co-worker with Humphry Davy, John Dalton and other investigators whose names are inseparably connected with the advance of chemical science, and was the recipient of many honors on account of his service to pharmacy. He was, besides, one of the most prominent philanthropists of his day in England.

Plough Court Pharmacy, in which the business now known as Allen & Hanburys originated, was established in Plough Court, London, about 1715, in the house in which the poet, Alexander Pope, was born. This house was demolished in 1872 to make room for buildings more in keeping with modern Lombard street, and to provide larger quarters for the Allen & Hanburys' pharmacy. The original owners of Plough Court Pharmacy, here illustrated, were Sylvanus and Timothy Bevan, "members of the Society of Friends and Freemen of the Society of the Art and Mystery of Pharmacopolites of the City of London," which was then empowered by charter to regulate the practice of pharmacy. The London Pharmacopeia of 1721 was then in use, and "apothecaries," as the freemen of the

above society were called, prescribed as well as dispensed medicines. For this they were bitterly opposed by regular medical practitioners; on the other hand, the "apothecaries" as bitterly opposed the encroachment of "chymists" and "druggists" who sold medicines in defiance of the Apothecaries' Society, which, it seems, was unable to suppress them. Proprietary medicines had also begun to appear, and altogether the business conditions of pharmacy at that time somewhat resembled those now, or within the last twenty years, prevalent in America, so that in this respect the history of pharmacy, like all other history, seems to have repeated itself.

Sylvanus Bevan, at whose wedding, by the way, William Penn is said to have been a guest, retired about 1764, and the Plough Court Pharmacy passed into his brother Timothy's control, and from him to his son, Joseph Gurney Bevan, a man of great learning and vast influence. It was during his ownership that William Allen entered Plough Court as an apprentice. In 1794 the business



THE PLOUGH COURT PHARMACY BEFORE 1873.
IN THIS HOUSE THE POET POPE
WAS BORN.

was acquired by Samuel Mildred, and the next year William Allen was admitted to partnership, the firm becoming Mildred & Allen.

During the eighty years that had then

by "druggists," and "apothecary" was understood to mean a medical practitioner. The London Pharmacopoeia of 1780 had much reduced the number of official drugs, and added many chemicals, as the science of chemistry had made great progress.

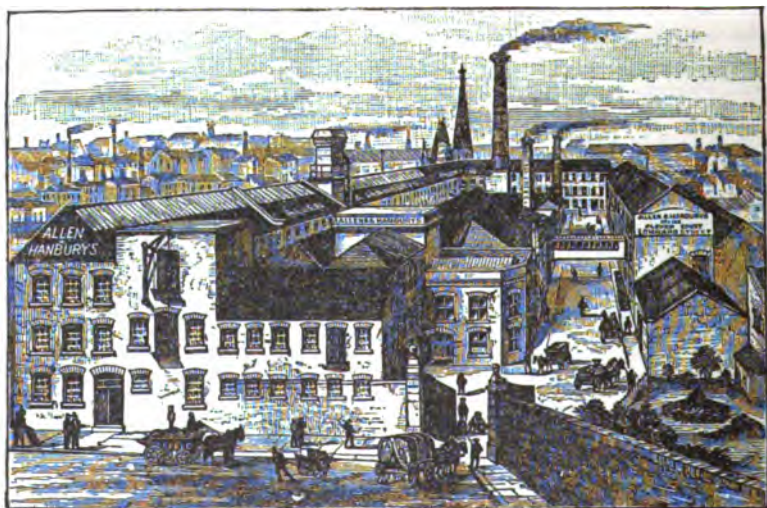
When William Allen assumed the management of Plough Court Pharmacy, it may be said to have made its first great stride forward. He established a laboratory at Plaistow; he conducted many experiments, and founded at Plough Court the "Askesian" Society, "for mutual improvement, inquiry and accurate investigation." This society he maintained for over twenty years, and its meetings were attended by men whose names are now familiar to every student of chemistry, including Humphry Davy, John Dalton, Astley Cooper and many others less celebrated.

In 1797 Mildred retired, and Allen took into partnership his friend, Luke Howard, a man of the same high character and mental calibre as himself, and the firm became Allen & Howard. It is hard to realize at the present time how limited the range of operation and how difficult the position of a manufacturing chemist was at that time. Chemistry was just beginning to undergo the great change inaugurated by Lavoisier, and its technical application was attracting great attention. William Allen's diary contains many interesting entries, showing his enthusiasm and interest in the experiments conducted by him at this time. He was elected a member of the Physical Society at Guy's Hospital; assisted in the formation of the British Mineralogical Society, and became a member of the



ARMS OF THE SOCIETY OF APOTHECARIES.

elapsed since the foundation of this historic pharmacy, the conditions under which the practice of pharmacy was conducted had materially changed; the Society of Apothecaries had practically lost its power and "druggists and chemists" had become nearly ten times as numerous in London as "apothecaries." Physicians' prescriptions were generally dispensed



WORKS AT BETHNAL GREEN, LONDON.

Royal Society, and later one of its lecturers, where he became more intimately associated with Humphry Davy. His scientific work now attracted much attention, and he was frequently called on to make analyses, while Plough Court Pharmacy became celebrated as a depot for chemical reagents. Various philanthropic enterprises also occupied his attention, which brought him into contact with many noted persons, whose friendship he retained for many years. Among these were the Duke of Kent, Queen Victoria's father, who consulted Allen in regard to his private finances; and the Czar Alexander of Russia, whom Allen visited in later years on the most friendly terms. The Peace Society was founded at Plough Court, and nearly all the meetings of the Anti-Slavery League were held there; Lord Brougham, Wilberforce and Thomas Clarkson constantly conferring with William Allen on this latter subject, and all their committee meetings being held there.

In 1807 Allen and Howard dissolved partnership, Allen retaining the retail and dispensing business, at Plough Court, and Howard conducting the laboratory, now removed to Stratford, as a separate concern. About 1804 John T. Barry had entered the Plough Court establishment as clerk, and several years later took almost entire charge of the business, introducing many improvements. A method devised by him for preparing extracts "in vacuo," attracted much attention. Barry and the nephews of Allen's second wife, Daniel Bell Hanbury and Cornelius Hanbury, were soon after admitted, and the firm became Allen, Hanburys & Barry. About this time the "Associated Apothecaries," a society for the purpose of securing legislative regulation of the practice of medicine and pharmacy, was formed, and the bill which they caused to be introduced was considered by chemists and druggists as threatening their position as dispensers. Allen was very prominent in opposing this bill, and was a member of the committee which finally secured its withdrawal; and when an amended bill was passed, two years later, Allen was still a member of the committee which had gained the removal of some of its most objectionable provisions. At a public meeting of druggists in April, 1841, William Allen moved the formation of the Pharmaceutical Society of Great Britain, and was one of the "committee of forty" who framed the laws for the government of the society. His partners, J. T. Barry and Daniel Bell Hanbury, were also members of this committee, which was later constituted the first Council of the society, and William Allen was unanimously chosen as its first president. He presided at the first annual meeting in 1842, and again in 1843.

In December of that year he died, at the age of 73.

After the death of William Allen the firm was for several years represented in the Council of the Pharmaceutical Society by Daniel Bell Hanbury, who was afterwards appointed treasurer, and continued to hold that office until 1867. In the year 1868 he retired from the business, and died in 1882, at the advanced age of 88. J. T. Barry retired from the business in 1856, and since that time the style of the firm has been Allen & Hanburys. Barry died in 1864. Daniel Hanbury, the oldest son of D. B. Hanbury, entered the business as a pupil at the age of 16, eventually becoming a partner. He was a student in the laboratory of the Pharmaceutical Society during the first session of 1844-45, and soon afterwards commenced to contribute papers to the *Pharmaceutical Journal* on the subject of pharmacology, which were followed in 1874 by the publication of "Pharmacographia," in conjunction with the late Professor Flückiger. In 1855 he was elected a Fellow of the Linnean Society, and in 1873 of the Royal Society—the fourth pupil in the Plough Court Pharmacy that had acquired this distinction. His work in connection with his favorite subject is too well known to require further mention here, and his early death, in 1875, at the age of 49, was a very great loss to pharmacy as well as to science.

From this period to within a few years ago the business was conducted solely by Cornelius Hanbury and his son, Frederick Janson Hanbury, who have worthily maintained the reputation of their predecessors, and are, like them, members of various learned societies. The first named was for several years treasurer of the Pharmaceutical Society, and the latter is a Fellow of the Linnean and Entomological societies, and one of England's foremost botanists and entomologists, his herbarium forming perhaps the most complete collection of British plants extant.

The only change of late years in the firm has been the converting of it into a limited liability company, under the same management as heretofore, with the addition of W. R. Dodd, for many years the head of their laboratory, to the directorate.

Their immense factories at Bethnal Green, in the east of London, a general view of which is shown here; their large factory at Ware, in Hertfordshire, for the manufacture of infants' foods and malt products; their three cod liver oil factories in Norway, where the oil is made by the firm's special process, and the immense scale on which they manufacture other specialties in medicinal and dietetic preparations, have reached dimensions never dreamed of by the founders of nearly two centuries ago, and the Plough Court Pharmacy of to-day, after nearly 170 years of continuous existence and improvement, would be a source of the greatest wonder to those who, in earlier years, assisted in its development.

The Arms of the Society of Apothecaries were granted to Sylvanus Bevan in 1715, and this interesting relic, in colored glass, is still to be seen in its ancient frame in the present pharmacy, and may be said to mark the commencement of the earliest reliable history of the firm.—*Pharmaceutical Era*.

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Peptenzyme is far superior to any other digestive preparation in the treatment of all disorders of the digestive organs. It promotes the digestion, both by aiding and perfecting the process itself, and by stimulating the appetite and secretory functions through the absorption of the embryo ferments.

Peptenzyme is the most important advancement ever made in the production of digestive ferments, for the treatment of

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And all Diseases which Depend Upon Loss of Functional Activity in the Organism.

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THESE Pastilles have now for many years been widely employed, and with the best results, by the leading throat specialists and physicians generally. Long experience has shown the following kinds to be the more generally useful and frequently prescribed:—

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- " 23. **Eucalyptus (Gum and Oil).** Antiseptic, stimulant and astringent.
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- " 27. **Compound Eucalyptus.** (Red Gum, Chlorate of Potash and Cubeba.)
- " 28. **Compound Guaiacum.** (Guaiacum, Chlorate of Potash and Red Gum.)



- No. 29. **Compound Rhatany and Cocaine.** (Ext. Rhatany, gr. ii.; Cocaine Hydrochlor., gr. 1-10th.) A very efficacious astringent and anodyne.
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- " 48. **Tannin, Cayenne and Black Currant.** Astringent, stimulant and soothing.
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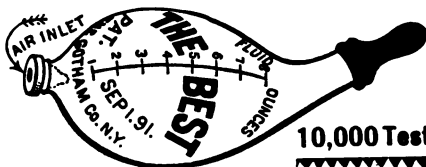
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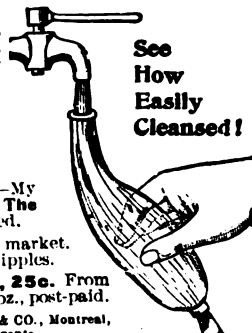
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R Sulphite Soda, 1 gr.
Salicylic Acid, 1 gr.
Nux Vomica, $\frac{1}{2}$ gr.
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Concentrated Pepsin, 1 gr.
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PIL. Antiseptic Comp. is serviceable in atonic dyspepsia, nervous dyspepsia—in fact, all forms of this disease, because it strengthens the lowered digestive vitality.

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Its refrigerant saline action recommends Eff. Sodium Phosphate (W. R. W. & Co.) in all exanthematous fevers.

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Eff. Kissingen

(W. R. WARNER & Co.)

AND

Eff. Vichy

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Acetanilid, 3 gra.

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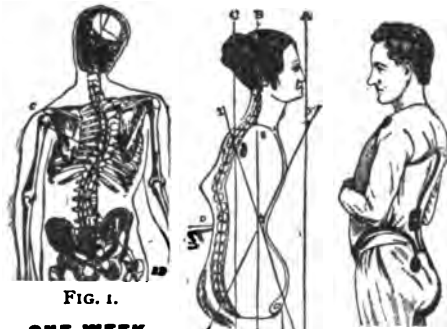


FIG. 1.

ONE WEEK.

FIG. 2.

FIG. 3.

DOCTOR, if you will send your spinal patient to us we will immediately arrest the curvature, and in *one week* place them on the road to all possible recovery. Ordinary oversight on your part will complete the case.

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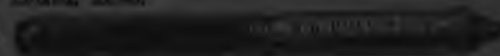
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MEDICAL QUARTERLY

A MAGAZINE OF THE
MEDICINE OF TO-DAY

EDITED BY
WILLIAM WARREN POTTER, M. D.

CONTENTS

Functional Cardiac Murmurs.	87
By A. JACOBV, M. D., LL. D.	
Appendicitis: Its Surgical Treatment.	105
By JOSEPH PRICE, M. D.	
Cystoid Disease of the Testis: Teratoma Testis?	115
By F. R. STURGIS, M. D.	
Does Sepsis Play a Prominent Causative Role in the Production of Pneumonia?	121
By EDWARD BRUSH, M. D.	
Heart Disease from an Obstetrical Point of View.	145
By ADAM WRIGHT, D. A., M. D.	
Experiences in Intestinal Surgery (continued from June).	151
By MATTHEW D. HARR, A. M., M. D.	
Hygiene of the Bedroom and Bedstead.	155
By LAWSON TAIT, F. R. C. S., M. D.	
Newspaper Medicine.	162
By WILLIAM W. WILSON, M. D.	
New Books.	163
The Editor's Desk.	165
Open Letters.	166

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NO single Food is suitable for the Infant for the whole period of the first nine months. At birth the digestive powers are only able to assimilate human milk or its physiological equivalent; and it is not until the child is six months old that any starchy Food is admissible.

ALLEN & HANBURY'S have introduced a Series of Foods to meet the increasing requirements of the infant economy.

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This Food should be given for the first three months.

A Sample of any or all of the Foods and Full Descriptive Pamphlet will be sent FREE to physicians upon request. Address 82 Warren St., New York.

Please specify on prescription the NUMBER of the Food desired.

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ESTABLISHED A. D. 1715.

82 WARREN STREET, NEW YORK.

Agent for Canada: **W. LLOYD WOOD, Toronto.**

THE

"Allenburys" Milk Food No. 2

is identical with No. 1, but contains in addition small quantities of maltose, dextrine, and soluble phosphates, derived from the digestion of whole meal. These are included to meet the increasing requirements of the infant economy; but it should be understood that there is no **unaltered starch** present.

This Food is designed for infants from three to six months of age.

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"Allenburys" Malted Food, No. 3

This preparation is a perfectly assimilable farinaceous Food. It is prepared on Baron von LIEBIG's principle of malting, but by greatly improved methods. It differs from other forms of malted food in that the malt is present in a soluble, concentrated, and most active form.

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Peptenzyme

The Only Perfect Digestant.

Peptenzyme presents in physiological activity the digestive principles, both active and latent, of all the glands of the digestive group.

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Cases of acute gastritis caused by the excessive use of alcohol, resulting in a serious arrest of the digestive process, causing epigastric distress, gaseous eructations, headache and general nervous tremors, insomnia and other characteristic features connected with such cases, may be effectively treated with Phenalgin in 10 grain doses. This coal-tar product is sedative and stimulating, correcting hyperacidity of the stomach and exercising an analgesic and hypnotic effect over the entire range of the disease. It is especially indicated in such cases where cardiac depressants must be carefully avoided. 10 grains of Phenalgin taken at night after dissipation and before retiring will usually prevent disagreeable sequelæ.

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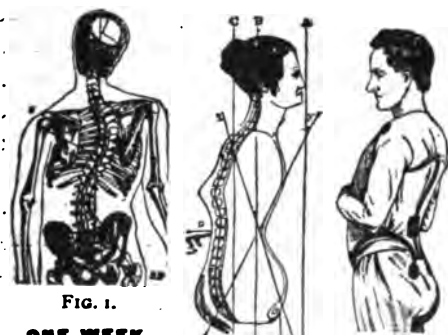


FIG. 1.

ONE WEEK.

FIG. 2.

FIG. 3.

DOCTOR, if you will send your spinal patient to us we will immediately arrest the curvature, and in *one week* place them on the road to all possible recovery. Ordinary oversight on your part will complete the case.

Highest Award. Chicago, 1899.

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Fig. 1. In Bilateral or Rotary Curvature. To reverse the force of the body's weight to the opposite side at each point of curvature is the true philosophy of cure.—BANNING.

Figs. 2 and 3. In Simple Drooping, Spinal Irritation and Antero-posterior Curvature, to lift the weight of head and shoulders from the tender spinal points, and by pushing forward the dorsal lumbar curve transfer pressure to central portions of bodies of vertebrae, is the sheet-anchor of hope.

—BANNING.

Nothing in nature has the inherent physical power to correct its own improper relation to gravity. "As the twig is bent the tree is inclined," is as true of the child as of the twig. Why, then, the absurd prognosis of "The child will outgrow it?"—BANNING.

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TO BE USED WITH ICED OR LUKEWARM WATER.



Physicians have, for a long time, had their attention called to the fact that beef extracts made by the LIEBIG process, are utterly devoid of the valuable and nutritious albuminous constituents of meat, as these are coagulated and filtered out in the process of manufacture.

Realizing this fact, we have, after very exhaustive experiments, succeeded in preparing the article which we offer as Wyeth's Beef Juice, and for which we make the following claims :

FIRST.—That it contains all the albuminous principles of beef in an active and soluble form.

SECOND.—That it contains the Hæmoglobin of the meat unaltered, as is evidenced by the bright arterial color of the preparation, and by the fact that it loses this color upon boiling as the Hæmoglobin is precipitated with the albumen.

THIRD.—That it will be found upon trial to possess the nutritive properties of the choicest beef to a higher degree than any extract of meat yet offered to the profession.

Physicians will find Wyeth's Beef Juice of great value as a strengthening diet in cases of convalescence, consumption, nervous prostration and similar diseases ; also, in typhoid fever, debility, etc. Beef tea prepared from it contains more nourishment than any other liquid

preparation of meat, and when properly seasoned, is more grateful and appetizing to the patient. Professional men who are suffering from over-work, mental anxiety, etc., will find that one-half teaspoonful, in about half a glass of iced water, taken at intervals during the day, and upon retiring, will relieve fatigue,—both of mind and body.

DIRECTIONS.—In cases of debility, nervous prostration, convalescence, etc., one-half to one teaspoonful in one-half tumblerful of iced or luke-warm water.

Each Bottle represents all the Nutriment contained in
Three Pounds of Selected Beef.

Price, per dozen bottles,	- . -	\$7.00
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are superior to the bottled waters which are of uncertain strength and contain Lithia in minute quantities in combination with other elements which are apt to neutralize its effect.

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Prompt and
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GOUT
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Externally



INDICATIONS.—In Gout, Neuralgia, Rheumatoid Arthritis, Sciatica and all Rheumatoid or Gouty Affections.

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contains the nutritive elements of beef, egg albumen and the gluten of wheat.

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CHLOROFORM.

Statistics appear to show that chloroform is less dangerous in warm than in cold countries. It is, therefore, always advisable, whenever for any reason chloroform is to be preferred to other anesthetics, to see that the operating-room has a high temperature.—*N. Y. Med. Times.*

AN ANTIDOTE TO CARBOLIC ACID.

Alvarez (*Revue de Therapeutique*) relates a case of carbolic acid poisoning to which he was called in consultation. He thought that the poison had all been absorbed, and so he did not try to provoke vomiting, but advised camphorated oil to the amount of about three ounces, simply for the sake of its soothing action on the gastric and esophageal lesions probably caused by the acid. But it seems to have accomplished more than this, for the patient recovered.

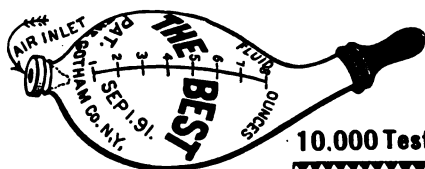
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H. D. Didama (*Philadelphia Med. Jour.*) asserts that nose-bleed can be arrested, in many instances, by the administration of a grain or more of opium, repeated, if necessary, in two or three hours. He has had no occasion to employ any other treatment for more than thirty years, as this has succeeded even after the failure of astringent injections and plugging the nostrils.

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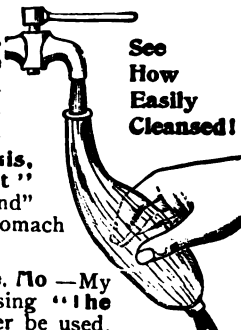
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<i>Hypophos. Strychnine</i>	1-32 grain

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CONTENTS

Experiences in Intestinal Surgery (Continued from p. 191)	25-26
By MATTHEW D. HANNE, M.D.	191
A Clinical Contribution to the Knowledge of Intussusception of the Small Intestine in Children, with Three Illustrations, 1899	267
By EDWARD J. HILL, M.D.	
Post-operative Ventral Hernia	275
By ROBERT F. MORRIS, M.D.	
The Antiseptic Factor in Gynecology	276
By JOHN W. BALLANTYNE, M.D., F.R.C.P., F.R.S.E.	
The Prognosis of Eclampsia	282
By HENRY REED HOPKINS, M.D.	
Influence of the Clinical Laboratory in Surgery	284
By WILLIS G. MACDONALD, M.D.	
Classification of Infectious Diseases	285
By W. H. THOMPSON, M.D.	
Clinical Illustrations of Tachycardia and Irregular Heart	291
By FRANK WOODBURY, M.D.	
Traumatic Ventral Hernia, Eviscerations and Vaginal Hydronephrosis	295
By THOMAS H. RANLEY, M.D.	
Age Doses	297
The Editor's Desk	297
Open Letters	299
Special Therapeutics	299

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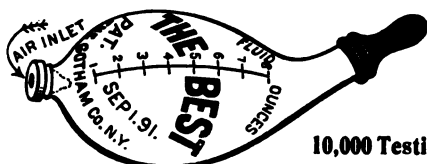
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CONTENTS

	PAGE
The Nature of the Cancerous Process and the Cancerous Cachexia; and the relation of Local Irritation to Each, By ROSWELL PARK, A. B., M. D.	280
Treatment of Cancer of the Cervix of the Uterus Complicated by Pregnancy, By GEORGE BEN JOHNSTON, A. D.	300
The Indication for and the Election of Operation for Uterine Myomata, By EDWARD J. H.E. M. D.	304
The Relation of Pregnancy to Nervous Diseases, By JAMES WRIGHT PUTNAM, M. D.	313
Nutrition and Anemia, By PAUL THORNDIKE, M. D.	317
The Treatment of Epilepsy in its Incubancy, By W. P. SPRATLING, M. D.	325
Limitation of Operative Gynecology, By JOHN BLAIR DEWEY, M. D.	332
Superstition and Science in Medicine, By CHARLES A. L. DEED, M. D.	345
New Books,	351
Editor's Desk,	356
Special Therapeutics,	375

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It will give us pleasure to send, prepaid, samples of

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As a Prophylactic it increases the resistance to disease, as an Antitoxin it destroys disease germs, as a Restorative it promotes glandular secretion and restores tone to the system, and as a Tissue Builder it stimulates the nutritive processes.

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It promotes and stimulates cell life throughout the organism, and thus cures diseased conditions and restores perfect health.

Put up in Tablets, Powder and Special Powder.

PREPARED BY

REED & CARNRICK,

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